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THE YUNNAN-BURMA ROAD

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IT is generally known that one consequence of the present Sino-Japanese War has been the rapid development of the far western provinces of China, the mountainous region which to-day is the stronghold and rallying ground of Free China in the long struggle against Japanese invasion. While much of this development is unnoticed in the west, and for military reasons unadvertised by the Chinese, one achievement vital to the whole plan has caught public attention by its simple and large conception: what is called the Burma Road in China. The road from Bhamo on the Irrawaddy to Ch'ung King, China's war-time capital on the Upper Yangtze, a road built across 1000 miles of mountains to circumvent the Japanese blockade of the coast, has fired the imagination of people who have now no leisure to master the topography of the Chinese war fronts. Although some parts of the long route from Burma to the Yangtze were built before the war with Japan began, the essential link with Burma, which traverses the most difficult country, was not started until the late autumn of 1937, and was built in the short space of one year. In December 1937 no work had been done on the 280-mile stretch between Burma and Hsia Kuan, half-way to K'un Ming (Yunnanfu), the capital of Yunnan province. In December 1938 the first convoy of munition lorries passed up the road from Bhamo, and since that day the traffic has never ceased.

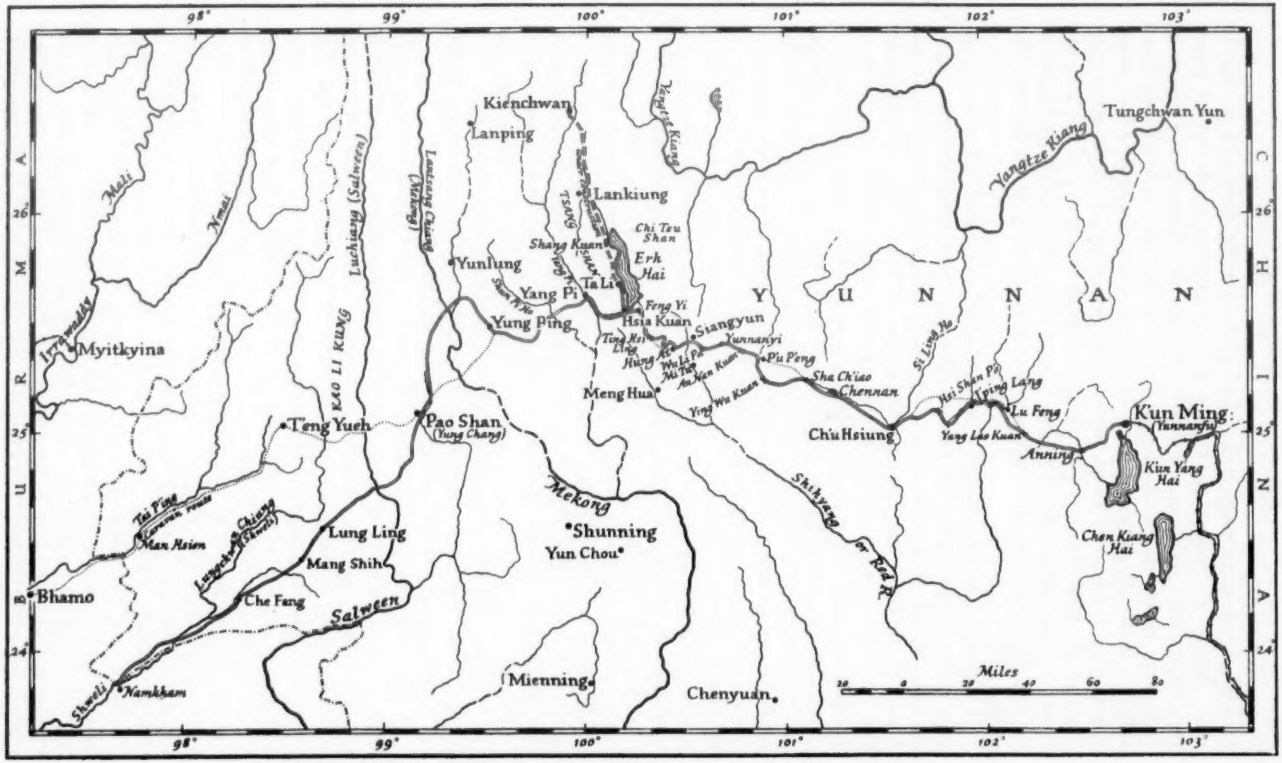
The difficulties which the Chinese engineers had to overcome were not only of Nature's making. Western Yunnan is sparsely populated, and labour had to be brought from places more than 100 miles distant from the line of the road. This labour was of course forced, each village and district being bound to supply a fixed number of workmen for a settled period, usually one month at a stretch. The labourers were mountain folk, many of them non-Chinese tribesmen who had never seen a wheeled vehicle of any kind, much less a motor car. Machinery and even tools were almost wholly lacking. The men carved the road out of rocky mountain sides with hoes and primitive hammers,

carried the road metal up from distant river beds in small wicker baskets, and rolled it with huge stone rollers hand-chipped from granite boulders. Working far from even the tiny villages of that empty land they had to camp out in bivouacs of branches and grass along the road itself, often at high altitudes where in winter the temperature at night is well below freezing-point.

In addition to these formidable handicaps the topography of western Yunnan seems designed by nature itself to hamper all communication between Burma and Yunnan. The province of Yunnan is a plateau forming the most southerly extension of the central Asiatic massif, a south-eastern projection of the Himalaya. At the eastern end of the great ranges which form the northern frontier of India there is a gap at the angle where the main chain of the mountains bends north to form the escarpment which divides the Tibetan plateau from western China. At this point four great rivers break through southwards to the sea: the Brahmaputra, the Salween, the Mekong, and the Yangtze. The first lies wholly in India, but the course of the other three lies across, or rather through, the Yunnan plateau, for all three run in deep gorges several thousand feet below the level of the plateau itself. Between these rivers high ranges rib the plateaux from north to south, cutting it into isolated sections. Other rivers of less size, such as the Shweli, a tributary of the Irrawaddy, the Red river, which reaches the sea in French Indo-China, and the West river, flowing out at Canton, rise on the Yunnan plateau itself and repeat the pattern on a lesser scale. Thus the traveller crossing Yunnan from east to west, or in the reverse direction from Burma to China, is faced with a continuous series of rivers and ranges athwart his route. The caravan roads climb the steep ranges in long flights of broken stone steps, and descend in the same way to a narrow gorge where the river is spanned by an old rickety suspension bridge swung on iron chains. Then once more they ascend, often crossing two such ranges, of about 9000–10,000 feet, in one day's stage. The few towns are built on the lowest slopes of the mountains where the valley widens out to form a narrow lake plateau, for only in such places is there sufficient flat land to grow enough rice to feed the population of a town.

The lake plateaux of Yunnan are as characteristic of the country as the river gorges and mountain ranges. Every city of any size, that is to say of ten thousand inhabitants or more, is built on such a plateau, though in many cases the lake has wholly or partially drained away. Going from west to east, T'eng Yueh, Pao Shan, Ta Li, Ch'u Hsiung, and K'un Ming are all built on lake plateaux, although in the case of the first two there is now no lake. Between these isolated centres of population are long stretches of forest-clad mountain and heath land, almost without any inhabitants apart from the small villages at rare intervals along a caravan route. It is not surprising therefore to find that these lake plateaux are for the most part inhabited by peoples of different stock and were once small independent states. To-day Chinese administration has been imposed on the whole country, and Chinese, the Yunnan variety of the Mandarin dialect, acts as a lingua franca understood by most of the non-Chinese tribesmen, and spoken as a mother tongue by many who are not ethnographically Chinese in origin.

The isolation of the plateaux is the more complete since travel from north



Sketch-map showing the caravan route and motor road from Yunnan to Burma

to south involves as many difficulties as crossing the plateau from east to west. Almost all Yunnan rivers flow in deep gorges, which, except where they widen into plateaux, are usually impassable. Consequently the river valleys are useless as routes. To get from one town to another in the same valley it is usually necessary to climb to the crest of the dividing range, follow along it for many miles, then descend and cross the river, ascend the range on the farther side, follow along that crest for the rest of the day, and finally descend to the stage point in the same valley from which one started in the morning. Journeys in Yunnan give a new meaning to the phrase "the eternal hills."

It is hardly surprising that, in a country which offers such difficulties, communications had remained till modern times in a most primitive state. In all the vast expanse of western China covered by the provinces of Yunnan and Kueichou, from Ch'ung King on the Yangtze to Burma, there was till barely five years ago no road on which any wheeled vehicle could pass. West of K'un Ming, which since 1907 has been connected with Hanoi by a narrow-gauge French railway, none of the inhabitants had ever seen a wheeled vehicle of any kind. The Yunnanese travelled either on the back of their astonishingly nimble and indefatigable little ponies, or on foot. All freight was carried by porters or pack animals, for there are no navigable rivers or streams in Yunnan. The roads, or rather paths, were once paved with heavy slabs of stone, but as repairs were never carried out the paving soon became irregular and broken to the last degree. The Chinese themselves have aptly described these roads in the common saying that they are "good for ten years and bad for ten thousand." Baber, one of the first British Consular officials to cross Yunnan in the 'seventies, has described them feelingly in his report of that journey: "If the British citizen at home wishes to get an accurate idea of travel on Yunnanese roads, let him empty half a ton of broken bricks and the contents of his rubbish bins on the back stairs, turn on all the taps, and climb up and down for seven hours on end, with only one halt of an hour for lunch." This description, accurate as it is, leaves out the great compensation of Yunnan travel: the unmatched beauty of the scenery.

It was military necessity which first induced the building of motor roads in west China. The Central Government's campaign against the Communist insurgents in the years 1935 and 1936 extended the formerly rather tenuous authority of the Nanking Government over all the western provinces. The necessity of moving troops into this region to follow up the retreating Communists led to the first construction of motor roads. The eastern section of the highway between Burma and Ch'ung King, that part which crosses the province of Kueichou and connects the Yangtze city with K'un Ming, capital of Yunnan, was ready for traffic early in 1935, and some parts of the route had been opened earlier still. A beginning had also been made with the western section, which is what is generally meant by the term "Burma–Yunnan road." On the direct order of Chiang K'ai-Shek, after his visit to K'un Ming, this road was pushed on as far as Hsia Kuan, half-way to Burma. Beyond that point the military necessities of the anti-Communist war did not require any road, and no further work was done until the war with Japan made it imperative to prepare a route which could not be cut by the sea power

of the enemy. It is with the purely Yunnanese sections of the road, K'un Ming to Hsia Kuan and Hsia Kuan to Burma, that this paper deals.

K'un Ming, formerly Yunnanfu and still better known to Europeans by that name, is by far the largest city in Yunnan, although until the outbreak of the war with Japan it remained a sleepy and half-forgotten provincial town in spite of the railway connection with Indo-China. K'un Ming is built not far from the shore of a large lake, the K'un Yang Hai, which is nearly 40 miles long and about 3–5 miles wide. The wide plateau of fertile rice land which stretches to the eastern shore of this lake is at first sight extraordinarily reminiscent of some landscape in Provence, for it is crossed with long lines of cypress trees. It is only at close view that one discovers that these do not border long straight roads, but a system of canals which carry the streams from the eastern hills across the plain to the lake, and make possible the systematic irrigation of the whole flat expanse. This irrigation system is said to be very ancient, dating back to the first Chinese settlement in the region, in the second century B.C. The southern European aspect of the K'un Ming plain is enhanced by the absence of any high ranges, for although the plateau is 6400 feet, the hills surrounding it are comparatively low, not exceeding 8000 feet, or 1500 feet higher than the plain itself.

The road to Burma crosses this plain for about 12 miles before climbing a low pass near the head of the lake, a point, still well in sight of the city, which is the midday halt for caravan traffic on the first stage west. For 60 miles west of K'un Ming the road traverses an upland region of rather bare rocky limestone hills and open heath covered with azalea and screw pines, the characteristic Yunnan tree with a corkscrew-like twisted growth. This eastern part of Yunnan is less cut up by cross ranges than the country farther west, consequently the construction of the road as far west as Lu Feng, the third caravan stage from K'un Ming, presented little real difficulty. But at the pass of Yang Lao the road descends sharply by many hairpin bends into the valley of the Lu river, which is some 2000 feet below the level of the plateau. Lu Feng, a small walled city built at the mouth of the river gorge, was for some time the end of the motor road, and up to the spring of 1938 the end of the metalled road surface. Beyond this point the road was a mud surface only passable in winter, which in Yunnan is the dry season. This little town also enjoys the unusual distinction of being one of the few places which successfully resisted the Communist troops during the invasion of 1936, when the Red army passed rapidly across Yunnan to seek refuge in the Tibetan border lands. The small garrison of Lu Feng held the town for two days until the Communists were driven off by the Central Government's air force.

It is west of Lu Feng that the real difficulties in road building began. The old caravan route, which the motor road had hitherto followed, led through the narrow gorge of the Lu river and then abruptly climbed the steep range on the northern bank. As this was not a possible line for any motor road it was necessary to carry the road up the river valley for about 40 miles, all of which had to be cut out of the cliff-like faces of the gorge. The river itself is here crossed three times by well-built stone bridges, which recently replaced the temporary wooden ones of 1936. At the head of this valley lies the high wooded range called the Hsi Shan P'o, or Western Mountain, the divide

between the Yangtze and Red river basins, which up to a few years ago was a notorious stronghold of bandits. This range rises to about 9000 feet, and, being flat-topped, the road is carried for several miles along the crest among pine woods and rhododendrons. The descent to the lake plateau of Ch'u Hsiung is in wet weather one of the worst, for this mountain is what the Yunnanese call a *t'u p'o*, a clay slope, with very little rock in the soil, and consequently in wet weather landslides are frequent. The road has to descend by a series of hairpin loops, one above the other, so that bad landslides tend to carry away two or more loops. Until the road was metalled in the spring of 1938 this spot was always impassable during the summer and in winter after snow falls.

Ch'u Hsiung is the sixth stage on the caravan road, and though only 167 miles from K'un Ming, few cars ever get farther than this on the first day out. The little city has become very prosperous since the motor road came there, and still more since the Central Aviation School, the Chinese Cranwell, built a training aerodrome on the sandy plain outside the city. Ch'u Hsiung is a Chinese town, although the people of the mountains round about are for the most part Lolos and Li Su, and for centuries it was the farthest Chinese outpost when western Yunnan was under the independent Shan kingdom of Nan Chao.

The section westward from Ch'u Hsiung to Hsia Kuan, almost exactly 200 miles, is mostly very wild uninhabited country, with four high passes to negotiate. The first is 40 miles from Ch'u Hsiung near the village of Sha Ch'iao, Sand Bridge, where the road leaves the valley of the Yangtze tributary, the Si Ling Ho, and corkscrews up the steep range to Ying Wu Kuan, the Parrot pass. I have never seen wild parrots there, although they are common in some parts of Yunnan, but though there are no parrots to be seen, there are great numbers of scarlet rhododendron bushes growing on a limestone range, contrary to the general belief that this shrub does not naturally grow in a lime soil. Here for nearly 50 miles the road passes through country in which there is not a village or even a house, for the few Li Su who live in these mountains seem anxious to avoid the road as far as possible, perhaps for fear of being made to work on it. The only settlement is the small town of P'u P'eng on the far side of the Ying Wu Kuan, the ninth stage on the caravan road, and a very long one, for it is 30 miles across thickly forested mountains from Sha Sh'iao. P'u P'eng is merely a hill village and halting-place set above a narrow valley which drains into the Red river, since Ying Wu Kuan is a Yangtze–Red river divide. Immediately across it the road winds up the second pass, An Nan Kuan, or the Annam pass as we would say, so called because this also divides the waters of the Yangtze basin to the west from those which drain to the Red river and so to Annam. The road along the whole way from K'un Ming to Hung Ai is thus constantly crossing and recrossing ranges which form the Red river–Yangtze divide. An Nan Kuan leads down to the dry lake plateau of Yunnanyi, the region "south of the clouds" from which the name of Yunnan, now used for the whole province, originally derives. This district, having a much higher range to the west which intercepts the monsoon rains, has a very dry climate and it is not possible to irrigate the whole plain. As it is thus one of the few areas of

Yang Lao Kuan

Pack horse road over Ying Wu Kuan

Motor road over An Nan Kuan

Yunnanyi

The Tsang Shan from Yang Pi

Lung Wei Kuan, near Ta Li

dry flat land in Yunnan, it was easy to use part of this plain for an aerodrome which has given a new importance to the little village of Yunnanyi.

About 12 miles west of Yunnanyi the road passes a famous limestone cave which is reputed to be a very great size. The entrance is wide and high, and it is certainly possible for more than two hundred people to shelter in the part which it lights. Farther in it breaks up into many galleries which, being pitch dark and partly flooded with rain water, I never had time to explore. Recently the military authorities decided to close the cave and use it for a munition dump; being handy for the road, and certainly bomb proof, it would be very suitable if Japanese aircraft ever get so far west as this. At this village, Ch'ing Hua Tung, the line of the Burma–Yunnan Railway, which the Chinese are now constructing, diverges from that of the motor road. From K'un Ming to Ch'ing Hua Tung the railway will follow the line of the road in so far as the necessity of tunnelling the mountains will permit, but from here the railway will turn south to Meng Hua and Mi Tu, and thence by Yun Chou to the Kunlong ferry on the Salween, which is at that point the frontier of Burma and Yunnan. This route is some 100 miles and more south of the road, and for the most part will pass through very sparsely inhabited country with few towns. Although it will therefore be of little value to the people of west Yunnan the proposed route is by far the easiest way, as it avoids three of the main mountain ranges and crosses the Mekong and Salween where those rivers are more easily accessible. With a few minor changes this is the route surveyed by General Davies and his collaborators in 1905.

After Ch'ing Hua Tung the motor road descends by the low pass of Wu Li Pa, the Five Li Hill, to the lower plateau of Hung Ai, which is not more than 5000 feet above sea-level. This plain lies immediately under the great Ting Hsi Ling range, which is the Red river–Mekong divide and in which the Red river rises a few miles north of Hung Ai village. The Ting Hsi Ling rises to 10,000 feet close to the point where the road crosses it, about 1000 feet lower, probably the highest point on the road between K'un Ming and Burma. The difficulty of crossing this range is due to the fact that there is really no pass at all on the eastern side. The caravan road climbs up 4000 feet in what is nothing more than a long flight of broken stone steps, and slides of mud where the steps have disappeared. The road has to climb the same slope by hairpin loops which are frequently carried away in the rains by landslides. On the western side, by contrast, the descent to the plain and lake of Ta Li is a long gentle valley between well-wooded mountains, the contrast being explained by the fact that the Ta Li plain lies 1700 feet higher than that of Hung Ai, at 6700 feet.

The region west of the Ting Hsi Ling and northward to the Yangtze is the land of the Min Chia, a non-Chinese people who have absorbed Chinese culture to a great extent but still retain their own language and certain distinctive characteristics in their social organization and religion. They also retain the good rice-growing land of the plain, unlike almost all other non-Chinese peoples who have been driven up to the mountains. Their chief centre is the city of Ta Li, which lies 10 miles north of the main road to Burma, but is now connected by a branch road which it is hoped one day to

extend northwards to Li Chiang on the borders of Tibet. Once the capital of the kingdom of Nan Chao, and still famous all over China as the source of the celebrated Ta Li marble, pieces of which were even dragged to Peking to adorn the Forbidden City, Ta Li is the most beautiful place in Yunnan, which is to say one of the most beautiful places in the world.

The Ta Li area is a perfect example of the self-contained lake plateaux of Yunnan. To the west the Tsang Shan range, which rises to 14,000 feet, the highest mountain on the line of the Burma road, and to the east the foot-hills of the Ting Hsi Ling, make barriers which can only be penetrated at three points. The Tsang Shan range runs north and south for 30 miles without a break, a giant upthrust of granite which dominates the country for miles around. On horseback one first sees Tsang Shan from the east at the top of An Nan Kuan, four days' journey from Ta Li; to the west it can be seen from the mountains overlooking Pao Shan, eight days' journey from Ta Li. At the foot of the mountain lies the long strip of lacustrine plain, never more than 3 miles wide, almost perfectly flat, and cultivated to the last inch. Beyond the plain the bow-shaped, or rather, as its name Erh Hai implies, ear-shaped lake, varying in width from 2 to 5 miles, stretches north and south for 25 miles, bordered on the east by arid rocky hills, which rise to the higher wooded holy mountain of Chi Tsu Shan, the Chicken Foot mountain, a name derived from the configuration of the five ridges which compose it.

Not only is the Ta Li plateau cut off by wild stretches of wooded mountain land extending in some directions for 50 miles; it is also confined by two very narrow passages between the Tsang Shan range and the lake, respectively at the northern and southern extremities of the plain. These two passes, called with characteristic Chinese imagination the Dragon's Head pass and the Dragon's Tail pass (Lung T'ou Kuan and Lung Wei Kuan), are defended by two fortresses, the Upper and Lower Barrier, Shang Kuan and Hsia Kuan, the last named lying on the direct line of the Burma road. A novelist describing an imaginary country would be accused of fantasy if he invented topography so perfectly suited to defence as these two entrances to the Ta Li plain. At Shang Kuan, the northern pass, where the Erh river flows into the lake, the Tsang Shan range is lowest, yet as if to counteract the opportunity which this might afford to an invader, it is more precipitous than elsewhere, and its side is split by a narrow deep ravine, quite impassable without a bridge, which runs down almost to the edge of the lake. The inner lip of the gorge is defended by a miniature Great Wall in the Chinese manner, and the small gap where the ravine reaches the lake is closed by the solid walls of the old fortress of Shang Kuan, built on the water's edge. Man has here put the finishing touches to nature's work, but at Hsia Kuan man had hardly anything to add. At the southern end of the lake the lower Erh river drains westward through a slit in the mountain which at its narrowest point is only 10 feet across; the river itself being bridged by a great boulder wedged between the cliffs, called T'ien Sheng Ch'iao, the Heaven Built Bridge. A narrow passage above this boulder, probably an earlier channel of the river itself, was until 1938 the only entrance from the west to the Ta Li plain, the gate through which the caravan traffic to Burma has passed for many centuries. On the inner bank of the river, above this gorge, where the current is

fast and deep, the fortress of Hsia Kuan guards an old stone bridge which is the only passage to Ta Li from the east and south. Thus not only the Burma road from west to east, but also the tea road to Tibet from south Yunnan, passes through Hsia Kuan. In order to make a roadway for vehicles it was necessary to blast away the cliff face opposite the Heaven Built Bridge for nearly a quarter of a mile. This was therefore one of the worst obstacles encountered in opening the Burma road for wheeled traffic.

It is not surprising that the Ta Li plateau was from very early times considered an ideal seat for kings, and that Ta Li city was for more than a thousand years the capital of the kingdom of Nan Chao which held most of the modern province of Yunnan.

Lung Wei Kuan, the Dragon's Tail pass, was an obstacle which the road engineers did not attempt to pass until the Japanese blockade made a road to Burma a vital necessity. Not only this gorge but the whole country west of Ta Li is far more difficult than the eastern section of the road. As one goes west in Yunnan the ranges are steeper and higher and the valleys more deeply cut; the rainfall is therefore heavier, since Yunnan receives the Indian monsoon from the south-west. Consequently the snow-line is lower in western Yunnan than in the Tibetan marches to the north-east. Ranges in eastern Yunnan like the Ting Hsi Ling at 10,000 feet are only occasionally covered with snow, but the Kao Li Kung just east of T'eng Yueh, 200 miles to the west, which is about the same height, is often covered with snow for months on end. The fact that the mountain tops receive far more rain than the plateau causes a curious inversion of the ordinary expectation that as one climbs higher the vegetation will be thinner and stunted. In Yunnan the trees grow higher as one ascends. At 6000 feet, the level of the plateau, there are only the screw pines and dwarf azalea scrub, but at 10,000 feet there are large deciduous trees like chestnuts, tree rhododendron, cedars, and several kinds of what appear to be ilex. Between 10,000 and 15,000 feet there is dense rain forest of magnolia, cedar, bamboo, and rhododendron, with the ilex and certain deciduous trees also. Tsang Shan is covered with rain forest to the very crest, and it is only such mountains as Yu Lung Shan, near Li Chiang, which is probably over 20,000 feet, that rise above the tree-line.

From Hsia Kuan to Pao Shan, a distance of about 180 miles, the motor road follows fairly closely the line of the caravan track, except at the crossing of the Mekong. Here, as the caravan road descends an almost sheer face for 2000 feet, it was necessary to make a wide detour, and the road crosses the river by a new suspension bridge about two stages north of the old Mekong bridge. When I passed through this country in December 1938 motor traffic was not yet open to the public, and travelling by caravan one had not always an opportunity of observing the line of the motor road. For two stages west of Hsia Kuan both roads follow the narrow valley of the lower Erh river and then turn up the valley of the Yang Pi river to the town of the same name. Although this place is two days' journey from Ta Li it is on exactly the opposite side of Tsang Shan, not 10 miles from Ta Li as the crow flies. For Tsang Shan, although the highest mountain in western Yunnan, is not a watershed of any importance. It divides the Erh Hai lake from the Yang Pi valley, but the Erh Hai drains into the Yang Pi river, which is a tributary of

the Mekong. Tsang Shan is in fact a geological freak, the only upthrust of granite in Yunnan east of the Salween, and its strata tilted vertically show that it must have been the consequence of some violent convulsion.

The road west of Yang Pi passes for six stages through a wild tangle of heavily forested ranges dividing various small tributaries of the Mekong. The only town is Yung P'ing, a centre of the Yunnan Moslems. This almost uninhabited district is the western border of the Min Chia country. Even upon the caravan route itself there are hardly any villages, and at the fourth stage from Ta Li there is literally only one farm-house, with accommodation for at most ten people. Those who get there first have a choice of two rooms, a loft and a stable. Those who arrive later can either camp in the inn yard with the mules or out on the mountain side. The place lies high, at least at 9000 feet, and the nights can be very cold. I arrived in time for the stable. The caravan traffic on the Burma road is surprisingly heavy when one considers the immense distances covered and the few towns along the route. Most of the traffic is Szechuan silk, which is shipped at Bhamo for the Indian market. These bales of silk, weighing about 100 lb., are loaded on mules at Sui Fu on the Yangtze above Chung King, and taken by the first caravan twenty days' journey to Chao T'ung, in north Yunnan. There caravans are changed and the silk is carried down to K'un Ming, another fifteen stages. From K'un Ming, Ta Li men take it to Hsia Kuan, a further thirteen days' journey, and from Hsia Kuan another set of muleteers, usually Moslems from the Ta Li district, take it to T'eng Yueh, fourteen stages. The last lap of seven stages down to Bhamo is undertaken by T'eng Yueh men whose mules are accustomed to the heat of the Burmese plain. These bales of silk thus travel for seventy stages to reach Bhamo, a distance of more than 600 miles, which is probably one of the longest pack routes still in operation. On their return journey the mules bring up cotton thread for the innumerable hand-looms on which the Yunnanese still make most of their own clothes.

Pao Shan, which was formerly called Yung Chang, and is Marco Polo's Voo Chan, is the largest city between K'un Ming and Mandalay, although it has a population of not more than thirty thousand at the most. Until 1939 it was at best nine days' ride and three days' bus journey from K'un Ming, and until two or three years ago it was twenty-three stages from K'un Ming. It was therefore sufficiently remote to be considered by the Manchu government a suitable place to exile political dissidents, usually from the region of Nanking. Consequently the population of Pao Shan to-day speaks the mandarin dialect of the lower Yangtze provinces and is in fact largely descended from these exiles. The original population, which was probably of Li Su stock, has now retreated into the mountains and the wide and fertile plain is settled by Chinese. At this place the motor road turns south to Lung Ling and the Chinese Shan states of Che Fang and Mang Shih, this route being considered easier than crossing the Kao Li Kung range to T'eng Yueh. The merchants of the latter place, for centuries the entrepôt of the Burma trade, are seriously disturbed at this detour, and talk of subscribing enough money to build a road down to Bhamo and across the Kao Li Kung to Pao Shan. If this is done it will be an undertaking much more formidable than any other part of the road, for the Kao Li Kung range, the Salween–Irrawaddy divide, is

The Tower of Five Glories at Ta Li

The pass west of Yang Pi

The motor road and pack horse bridges over the Shun Pi Ho

The plateau of T'eng Yueh

The Salween bridge

The Tai P'ing near T'eng Yueh

almost a sheer wall rising 6000 feet above the Salween valley. The caravan road which crosses the Salween by a suspension bridge climbs this range by what is nothing but a long stone staircase winding up a narrow cleft. No motor road could be constructed here unless the cliff face were blasted out every foot of the way.

West of Pao Shan, and especially west of the Salween which is two stages from Pao Shan, the character of the country changes. One is conscious that it is no longer quite the usual Yunnan scene. The Salween valley itself, famous for its malaria and shunned by the Chinese, is only 2000 feet above sea-level, whereas the Mekong stands at 4000 feet. Here one begins to see new trees and fruits. The banana, which in Ta Li is a curiosity, is everywhere for sale. The Kao Li Kung is covered with a dense forest of immensely tall evergreen trees, unlike any seen in other parts of the journey, and the forest is full of howling gibbons who follow the slow ascent of the caravan, invisible but very audible. Two stages from the Salween one comes to the last lake plateau of Yunnan, that of T'eng Yueh, although there is now no lake. T'eng Yueh is generally famous for three things: the waterfall, which is very beautiful, the city wall, which does not enclose the city, and Ma An Shan, the only extinct volcano in China. No one seems to know why the town or T'eng Yueh is built almost entirely outside the city wall, within which there are only a few government buildings and temples. Perhaps it was originally the Chinese stronghold, and the local Shan populace were either not allowed or did not wish to live inside the fortress.

T'eng Yueh is also the last centre of Chinese colonization. The seven stages to Bhamo are through the Chinese Shan states, tributary principalities ruled by Sawbwas as on the Burmese side of the frontier. After T'eng Yueh one is still politically but not ethically or culturally in China. The Shan villages, with their Buddhist temples in the Burmese style and their yellow-robed monks, are wholly alien to the Yunnan plateau, and as the road descends the valley of the Tai P'ing river, instead of climbing up and down mountains, the characteristics of true Yunnanese travel disappear. Four days from T'eng Yueh one comes to the village of Man Hsien, a name which, sadly uncomplimentary to the British Raj, means Barbarian Limits. It is the last town in China.

Even before Man Hsien is reached the country has become dense jungle, an almost solid wall of bamboo and banana and towering trees which throw the path into deep shade. About 10 miles below Man Hsien, in the heart of the jungle, unmarked by post or placard, unguarded by any house or soldier, there is a small iron bridge across a stream. That is the frontier between China and the British Empire.

DISCUSSION

Before the paper the PRESIDENT (Field-Marshal Sir PHILIP CHETWODE) said: I have pleasure in introducing to you Mr. Patrick Fitzgerald, who has in recent years been following his anthropological and geographical researches and is peculiarly well qualified to speak to us on the subject of Ta Li and the Burma–Yunnan road. It is a road about which we have heard much since the outbreak of the war between China and Japan.

Mr. Fitzgerald then read the paper printed above, and a discussion followed.

Mr. E. H. KEELING: I went a few miles into China along the Burma–Yunnan road a little over twelve months ago. It is interesting to note, and I was rather surprised that the lecturer did not mention, that at the Burma end the road is connected not only with Bhamo on the Irrawaddy but with Lashio on the Burma railway. It is possible to go from Rangoon to China either by steamer up the Irrawaddy to Bhamo and then by road, or by rail to Lashio and then by road. The existence of this second route more than doubles the value of the road to China, because whereas the river route to Bhamo takes anything from one to two weeks, the railway from Rangoon to Lashio takes only one day. It is of undoubted value to China to have both routes in case either river or railway should be interrupted.

Mr. FITZGERALD: I am glad to hear that because, as I explained, the motor road was not open when I was in the area. I was unable to go by road over the last section of the route. From Pao Shan we went by horse and did not see the actual road at the point where it joins the frontier at Namkham.

Asked in what seasons the road was open and how transport was affected by climatic conditions,

Mr. FITZGERALD replied: The road is supposed to be open the whole year round. In rainy periods in summer it is of course going to be washed away in the mountain passes once or possibly twice a week. The idea is to have one hundred men every mile or so to repair the road as soon as it is washed away. That will be done by forced labour and I understand that, except for a short time, the road was in fact kept open in the summer of 1939. The eastern section as far as Ta Li, which was opened in 1936, was kept open for nine to ten months each year. After the outbreak of war between China and Japan it seemed more important to keep it open longer and it was only closed for three weeks during 1938. I should say July, August, and September are the most difficult months; October is also frequently a difficult month. Western Yunnan has the monsoon climate of India, and if the monsoon breaks in May the road may be washed out in the middle of that month. If the monsoon holds off there may not be serious rains until the end of June. Once it breaks the monsoon sometimes continues until the end of October, sometimes only to the middle of September. August and July are almost certain to be months of heavy rain.

Asked if he made the journey from Ta Li partly by motor car and partly by mule,

Mr. FITZGERALD replied: I have travelled the road from Ta Li to Yunnanfu seven times, all but twice by motor car. I travelled from Ta Li to the frontier by mule because motor traffic had not commenced in that section.

Dr. DUDLEY STAMP: A little over a year ago I had an opportunity of going over most of the roads of Burma leading to the Chinese section, when I had the interesting experience of wet weather in the dry season, with the result that we were held up for some days. One naturally formed the opinion that the utilization of the road, even the motor road, will probably have to depend very much indeed upon weather conditions. Motoring over the new motor road is still something of an adventure, at any rate to those used to conditions in western Europe. Can the lecturer assess the real value of the road for transport purposes, apart from an emergency? The road is frequently referred to in newspapers as "the new back door into China," as if in the future it is going to be an important artery of commercial traffic. Having seen the type of country portrayed on the screen one is inclined to ask whether there is serious justification for regarding the motor road, interesting as it is, as an avenue of any considerable body of trade in the future.

Mr. FITZGERALD: As a military road intended for the transport of munitions

its value lies in maintaining a stream of supplies. As an aid to commerce the road has practically no value because there are no inhabitants most of the way along it. Where there are any they have no purchasing power, and such as travel would never dream of going by bus or motor car if able to walk, as they have been accustomed to do all their lives. The eastern section of the road which has been open for three years carries hardly any freight; all the freight goes by mule.

Mr. KEELING: I can say that many thousands of tons of munitions went into China *via* Burma during 1939.

Sir ERNEST WILTON: I have doubts whether thousands of tons went that way and arrived at their destination. The road has been boomed a good deal, but it can hardly be regarded as a success, even as an emergency road. Comparatively speaking, there is only a trickle of stuff that gets over it, nor is it at all likely to develop into a permanent motor route or railway. Burma is unfortunately situated as regards Yunnan and the Chinese provinces beyond. The physical geography of western Yunnan constitutes a very formidable obstacle to transport of any kind, and it is necessary to climb up and down across very difficult country to the central plateau of Yunnan before being able to secure such trade as is available over and above the small amount in the west. Indo-China has a less difficult access to central Yunnan from the south, and the French about thirty years ago constructed a subsidized railway from Laskai on the frontier along the Red river to Yunnanfu. It was a good many years before it could pay even interest on the capital, and the average monthly freight has been 3000 tons until last year when it jumped to 20,000 tons because of hostilities between China and Japan. As regards British trade from the Burma side with Yunnan and beyond to Szechuan and Kueichou, I am afraid that it would be hopeless to regard the motor route as a paying commercial proposition.

Mr. FITZGERALD: I would not say that. The silk from Szechuan does in fact go out from Bhamo by mule. The whole of the caravan traffic from western Yunnan is entirely outward from Szechuan. It is taken in stages from Szechuan to Bhamo. There are two series of fourteen and thirteen-day stages to Yunnanfu; thirteen days to Ta Li; fourteen to T'eng Yueh, and seven days to Bhamo. The bales of raw silk are carried the whole way to Bhamo on mule-back and then loaded on to the river vessels and taken to Rangoon. One sees at certain camping points, such as the Salween bridge, as many as 400 to 500 mules together in one day. There are four or five caravans each day in the dry season.

Mr. GERALD SAMSON: Is it not also a fact that Burmese cotton goes over the road into Yunnan?

With regard to Sir Ernest Wilton's remarks, as to the commercial value of the Burma road, may I say that before journeying over it in February 1939 I had spent three years in China. Since the Sino-Japanese conflict began in 1937, I have travelled extensively in the south-western provinces of new China—Yunnan, Kueichou, and Szechuan, three of the richest in the Republic—where economic reconstruction and development is progressing at a rapid rate. In due course the rich mineral resources of this and other areas will be opened up. All but coal and iron will be chiefly mined for export, and their logical outward route is over the Burma road which by then will be a first-class all-weather highway. When the war is over, the traffic into China will consist of manufactured goods of all descriptions, mainly British, I suggest, if we are alive to our opportunity. Moreover I venture to predict that there will come a time when the growing prosperity and purchasing power of the inhabitants of this new market will reach a volume that will not only tax the capacity of the Burma road, but also of the Yunnan–Burma railway now under construction.

The great benefit of this trade to Burma is self-apparent, and in addition, there is every reason to anticipate a steady increase during the coming years in the amount of Burmese cotton used by the Yunnan cotton mills, whose output is being expanded as quickly as new machinery is laid down. I am therefore personally convinced that every day and in every way the Burma–Yunnan road is going to become more and more important to both Burma and China.

Professor C. G. SELIGMAN: Mr. Fitzgerald said nothing concerning the anthropological side of his expedition, so I must mention that. I have to congratulate him on two counts: on his excellent anthropological work, of which I know something, as well as on his extremely interesting description of his traverse and economic exploration of the new road and its possibilities. We are very lucky in this Society to have men as many-sided as Mr. Fitzgerald, for it must not be forgotten that he is, or was, primarily an historian.

The PRESIDENT: It is somewhat curious that there are in this hall five people who have been to the remote part of the world the lecturer has described. And, curiously enough, I make a sixth. I was there so long ago that I do not like to think about it. I was with the Kachin expedition and then in the Shan States, so I know the country intimately.

I noticed the difficulty experienced with the mule-drivers. I was a transport officer when I first went to that part of the world, and we used to deal with Panthay Chinese mule-men. At that time we were liable to be shot at because we were opening up new country. When the mule-drivers wanted to feed their mules at any time of the day they outspanned them and just turned them loose, regardless of the tactical situation. Sometimes we had to picket the hills at great inconvenience. When it was time to gather the mules together again the driver got hold of a bell-mule and began making curious outcries, whereupon the mules all came back from the jungle. There is another interesting feature about transport in that remote part of the world to which the lecturer did not refer. He showed photographs of mule-loads on the ground. The soldiers in this audience will know how distressing mules are to deal with. There is a saddle on the animal to which the load is strapped directly. Frequently the mule objects very strongly, and kicks and bucks until the load is off. But the Chinese mules are extraordinarily well trained. A wooden framework is put on the ground and the loads are fastened to it before the mule appears. The driver then brings the mule up, the animal puts its head down and walks along, and two men lift the load up on the framework and set it down on a sort of cushion on the mule's back.

The last time I went up to Lashio I was Commander-in-Chief. I remember receiving a message from a Chinese general on the opposite undemarcated part of the frontier, on the other side of the Salween, who gave the British five days to leave the part of the country in which I was. Needless to say we did not leave, as we were well within our side of the boundary. Since then the boundary has been properly demarcated by an international boundary commission.

All I have to do now is to ask you to accord a hearty vote of thanks to the lecturer for his most interesting lecture.

Note on the spelling of names

The names in Mr. Fitzgerald's paper follow the Wade-Giles romanization. The P.C.G.N. recommends the forms used by the Chinese Postal Guide, which does not distinguish between hard and aspirated initials. Thus the Guide would spell *Ch'ung King* as *Chungking*, *P'u P'eng* as *Pupeng*. Not all the names which occur in such a paper can be found in the Guide.

GEOGRAPHICAL ASPECTS OF JEWISH SETTLEMENT EAST OF GERMANY

H. G. WANKLYN

Meeting of the Society, 15 January 1940

THE subject of Jewish migration and settlement seems so far to have escaped the attention of geographers. They have possibly fought shy of this topic because it is difficult to explain the fortunes of the Jewish groups in terms of man's relationship to his environment, when these fortunes have been directed so very much by the will, not to say the caprice, of other human beings. But the development of the Jewish people should not really be outside the scope of studies in human geography. It is often forgotten how great a part of the population of Europe for centuries existed and increased and made its mark upon the natural surroundings, hedged about by the restrictions of man-made law. One need only cite the conditions of peasant labour in central and eastern Europe up to the middle of the nineteenth century as an example. Again, though the history of the Jews has been marked by outbursts of fearful persecution which inevitably stand out in written record, this people enjoyed also periods of comparative calm and prosperity, in which they could, within limits, make something of the regions which they inhabited. It is always the abnormal incidents which attract attention and the normal terms of development which escape notice.

A far more formidable check at the moment to geographical or any other studies of the Jewish people lies in the scattering and inaccessibility of many valuable documentary sources. The practice of dispersing much valuable information in periodicals and in the *Festschriften* makes the collection of material hard work in normal times.[1] In any case also the statistical evidence of Jewish migration and settlement is admitted by Jewish scholars to be scanty and unreliable.[2] But the difficulty is at present very much increased by the destruction and confiscation of Jewish archives in Germany and Poland, and by the fact that for the last twenty-five years the main activity in Jewish studies, apart from the German, has been in the United States. The raw material for such a study is not, at the moment, easy to assemble in this country.

Geographical interest in the wanderings and settlements of the Jews is justified mainly on account of the following outstanding characteristics in their history. In the first place, much can be learnt from the development of the Jewish groups of all forms of migration, from one locality to another, from country to country, and from the Old World to the New. In the second place,

[1] Information of this kind also only comes into the category of secondary sources. The task of drawing conclusions of geographical value from original material is much more formidable. See the discussion of possible lines of work of this kind at the end of this paper.

[2] A good example of the disputed character of these statistics is in the figures cited for the total of the Jewish population at the beginning of the Christian era. Fishberg discusses the estimates varying between 1,000,000 and 8,000,000 in 'The Jews,' pp. 2–3, New York, 1911.

the scattering and persistence of Jewish settlement all over the globe provides material for the study of acclimatization,[1] though this particular question is outside the scope of this paper. In the third, the Jews are more directly connected than any other people with the rapid change in the last century of the proportions between urban and rural settlement. Finally there is their association throughout economic history with the development of trade routes.

The first, third, and fourth of these topics will recur often in this discussion of Jewish settlements east of Germany. "East of Germany" is a phrase however which itself needs a little attention at the moment. For the purposes of this paper, the eastern frontier of Germany is that accepted between 1919 and 1938, excluding Austria, Czechoslovakia, Memel-land, and west Poland,[2] though there is often occasion to refer to the Germany whose frontiers between 1772 and 1914 stretched far into Poland. Beyond this line the most interesting studies of Jewish settlement concern two regions. The first is the Pale of Settlement established in the old Russian Empire. The limits of the Pale varied between 1794 and 1914. It always included after 1815 however a large part of Polish-speaking Russia, and the Letto-Lithuanian, White Russian and Ukrainian lands which before the Partition Treaties at the end of the eighteenth century had belonged to the Kingdom of Poland, and had been ceded by those treaties to the Muscovites (see Figs. 1, 2). The other region of interest is the south and west of the Polish Kingdom which was divided between Prussia and Austria. These two together with the Pale, in the conception of the geographer, form the "Isthmus of Europe," between the Baltic and the Black Sea; and it is with the Isthmus that this paper is mainly concerned.

Less material seems to be available to most students for the lands south of the Carpathians, that is the Middle and Lower Danube regions and the Balkan Peninsula.[3] In many ways however the concentration of study on the lands immediately east of Germany is satisfactory, since it is from these that the world problem of Jewry has really arisen.

Ruppin in his most recent study[4] has traced shortly the main migrations of the Jewish people. It is interesting to comment very briefly on these movements, since they explain the composition of the Jewish groups east of Germany until the violent upheaval of this part of Europe in 1939.

After the dispersion from Palestine in the first century the majority of Jews remained in the Near East until the eleventh century, inhabiting an area between Alexandria in the west and Baghdad in the east. There are several

[1] See Fishberg, pp. 16–20.

[2] It is as well to remember that this frontier also signifies in most works on Jewish settlement in Europe the division between central and eastern Europe. Central Europe according to the definitions of some regional geographers extends considerably east of the German-speaking lands.

[3] The records of two Jewish travellers should however be noted. These are the 'Memoirs of Glueckel von Hammeln' (1645–1724), a citizeness of Hamburg, and the 'Memoirs of Ber of Bolechow' (1723–1805). Glueckel von Hammeln's diaries were translated and edited by Lowenthal and published in New York in 1932. Ber of Bolechov's records, which concern especially eastern Galicia and northern Hungary, were translated by Vishnitzer and published by the Oxford University Press in 1923.

[4] See Part II of 'The Jews in the modern world,' London, 1934.

accounts however of a northward movement of Jews both before the Diaspora and during the first period of concentration on the Near East.[1] The earlier emigrants to the north were traders following in the wake of the Greeks to found commercial colonies on the Black Sea coasts. They were probably Greek in speech, but certainly Hebrew in the doctrines and practices of their religion. A later group moved north-east in the ninth century to the Lower

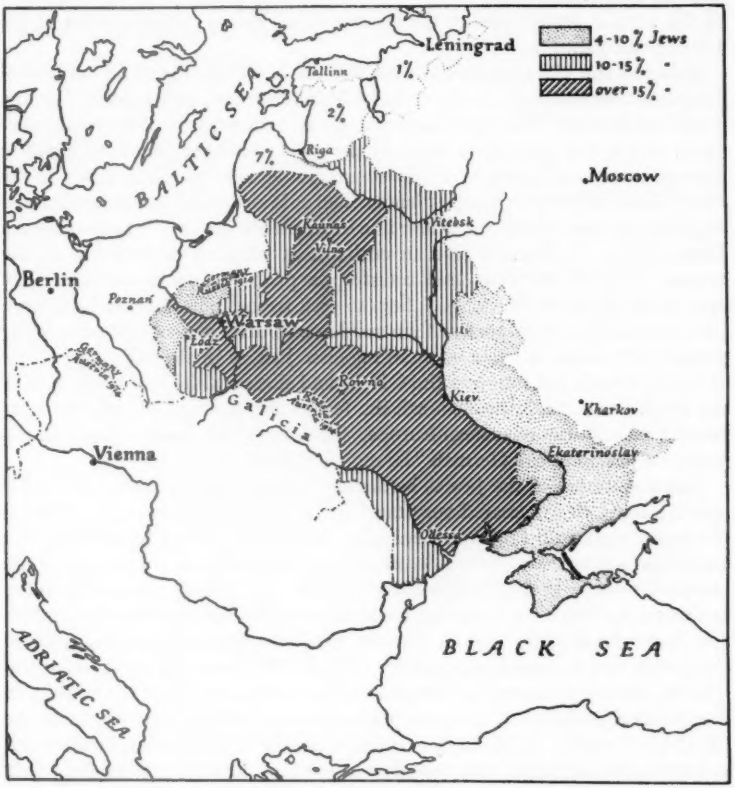


Fig. 1. The Jewish Pale

Volga region then controlled by the Khazars.[2] Their motive for migration was

[1] See Dubnow, 'History of the Jews in Russia and Poland,' vol. I, pp. 13 ff. (trans. Friedländer), Philadelphia, 1916.

[2] See Kadlec, "The Empire and its northern neighbours," *Cambridge Medieval History*, IV, pp. 190–1. Dubnow also discusses the interest of the Khazar settlements of the Jews, from the point of view of the numerous conversions of the Khazars to Judaism (see pp. 20–8). There is another record in Joseph Ha-Kohen's Chronicle of a seventh-century movement of Jews from Persia into what is now Russian territory, and even as far west as the German-speaking lands. This was due to the Arab conquests over the Persians in A.D. 690.

partly persecution within the Byzantine Empire, and partly the attraction of operating the east–west trade connection between the Byzantine Empire and the Caliphate. With the break-up of the Khazar State in the eleventh century the Jews shifted west again. The majority settled in the Crimea where, with the Tartars and Italians, they were responsible for much of the trade between the Black Sea and Mediterranean lands. A few attempted in Kiev the dangerous rôle of intermediaries, both commercial and diplomatic, between the rulers of the nomad pastoralists on the grasslands of Russia and the Slavs of the forest principalities.

Between the eleventh and the fourteenth centuries the main centres of Jewish settlement were in the western Mediterranean, and especially in the Iberian Peninsula. This was the period of the predominance of the Sephardic[1] Jews. But at the same time, north of the great east–west line of highland in Europe some small streams of Jewish emigrants were trickling slowly in the other direction towards the Slav lands. The episodes which are always quoted as giving impetus to this particular line of migration are the Crusades and the Black Death. In the first case an outburst of religious enthusiasm; in the second, a social and economic catastrophe produced an outbreak of fury against the Jews, which obliged them to seek fresh lands. But perhaps more persistent and more important than sudden outbursts of persecution was the positive attraction of trade in these regions. Just as in the early period the Jewish colonists had followed the Greeks and shared with them the profits of the Black Sea trade, so in the north the Jews with the Germans saw the commercial possibilities of eastern Europe. They took part unconsciously in the medieval period of the German "Drang nach Osten."

The importance of the Jewish settlements of the region between the Baltic and the Black Sea increased very much after the fifteenth century. Between the years 1492 and 1498 the Sephardic Jews were driven by anti-Semitic legislation out of the western Mediterranean countries, and by the end of the sixteenth century they were also excluded from the Spanish possessions in the Italian peninsula. This penal legislation sent the Jews east again to the Balkan and Asiatic lands of the Turkish Empire. With their dispersal the leadership of the Jewish people passed once and for all to the Askenazic[2] Jews of the north. The latter were welcomed as immigrants by a certain section of the nobility in the Polish Kingdom, and began to play a definite if rather peculiar part in the life of the country. It was in this region in Europe and between the sixteenth and twentieth centuries that the most significant development in the whole of modern Jewish history took place. The Jewish people in the Isthmus was composed during these three centuries of an overwhelming majority of the Askenazic element. In comparison the Sephardic Jews were insignificant and

[1] The term "Sephardic" comes from the Hebrew *Sepharad*. This is used in the Book of Obadiah, verse 20, "And the captivity of Jerusalem which is in Sepharad shall possess the cities of the south." It denoted in Hebrew an unknown region and was later conveniently used to describe the Mediterranean settlements of Jewish groups west of the Levant.

[2] The names Askenhaz and Ashkenaz are mentioned twice in the Old Testament (1 Chron. i, 6, and Gen. x, 3) in the genealogical tables. The term Askenazic however, like Sephardic, acquired in the course of history something of a geographical significance to denote the Jews of northern and north-eastern Europe.

confined mainly to the Ottoman lands. The small substratum of Hellenized Jews dating from the first migrations north and east had been partly assimilated by the Khazars, and was by the end of the Middle Ages almost completely obliterated by the later and larger Jewish immigrant groups from the west.

The history of the Jews in the Isthmus region between the sixteenth and the twentieth centuries falls into two clear chronological divisions, each of which has its own geographical interest. During the sixteenth, seventeenth, and eighteenth centuries the general separateness of Jewish existence was very

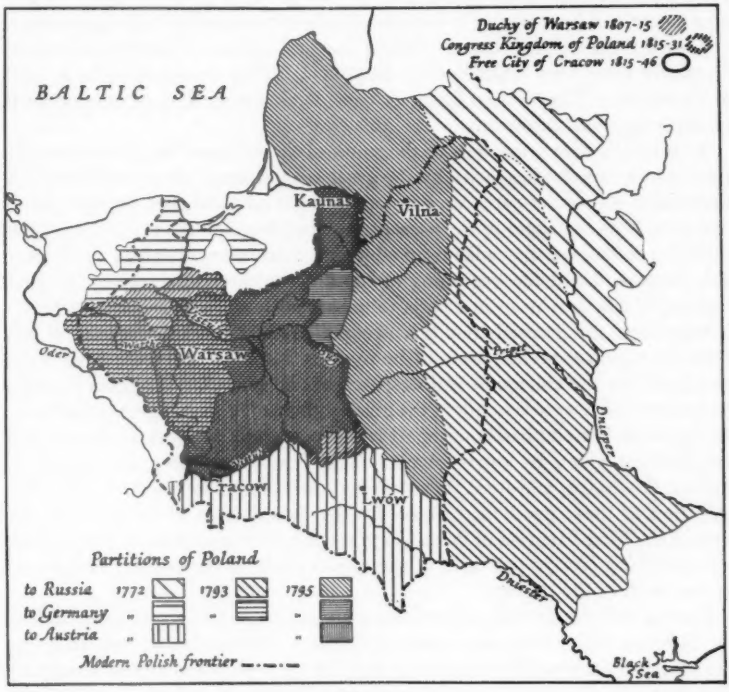


Fig. 2

marked, although there were exceptions in many communities. Their contribution to the economy of the Polish, Lithuanian, and West Russian peoples was complementary to and not competitive with the activity of the indigenous groups. Their medieval wanderings had been through a continent predominantly rural in settlement and economy, with very rigid conditions for the possession and tenure of land and for the control of labour. The majority of the Jews were thus inevitably excluded from the main framework of the social and economic system. But at the same time, until the beginning of the nineteenth century, Jewish settlement and activity in spite of its distinction from the Gentile reflected the emphasis on rural rather than urban existence. A large part of the Jewish population was scattered in hamlets, villages, and small

towns.[1] Indeed the character of Jewish settlement in the Isthmus region until a hundred years ago can best be imagined by thinking of the modern distributions in the Middle Niemen basin in Lithuania, or in the upland country of Sub-Carpathian Russia. The traces of existence in small communities which are still apparent in the Isthmus to-day mark the contrast between this settlement area and others of more recent exploration by the Jews. Immediately east of Germany the Jewish people inhabited a fairly definite region in Europe mainly in communities of small numbers. In western Europe and the New World, Jewish settlement has developed in many different countries and continents, but increasingly in compact blocks of population in the great cities.

Jewish means of subsistence during the first period of settlement east of Germany have been described by Ruppin as urban occupations in a rural environment.[2] They varied however considerably according to geographical circumstance and resource.

In the cultivable grasslands of the south of the Isthmus the Jews were employed in a threefold capacity by the great landowners. They performed the unenviable rôle of tax-gatherer, a function which now and then brought down upon the Jews the anger of the peasantry. They handled the rye crops for the distilling and sale of the vodka from which the estate owners gained a considerable income. Until the beginning of the nineteenth century, when the first legislation was drawn up in Russia to debar the Jews from keeping taverns,[3] it was taken for granted that this occupation, in the southern part of the Isthmus region especially, would be in their hands. Finally the Jews were employed for the collection and despatch of such farming products as grain and hides which were sent out of the grasslands to the forest regions or abroad. In the north, the emphasis on import and export trade was greater than on the employment given by estate owners. The Jews were the main dealers in timber, flax, skins, and furs: they supplied the German entrepôts for the distribution of these goods and especially the Saxon town of Leipzig. At the time of the First Partition of Poland (1772) the Jews were reckoned responsible for something like 75 per cent. of the export trade of the country and about 10 per cent. of the import.

During this period the pre-eminence amongst the Jewish communities in the Isthmus region was sometimes in southern grasslands and sometimes in the northern forests. The somewhat dispersed Jewish population of the south appears to have been the more important until the destructive pogroms of the decade between 1648 and 1658 which were partly directed against the tax-gatherers. Thereafter priority amongst the Jews of the Polish Kingdom passed to the northern groups until the time of the Partition Treaties.

In the nineteenth century the share of the East European Jews in the economic development of Europe also had its own distinctive features. These are interesting, because at this stage of human development, when the relation-

[1] Lestschinsky reckons that at the beginning of the nineteenth century one-third of the Jews in Europe were settled in villages with two or three Jewish families per village, and one-third in groups averaging 500 persons. Less than 5 per cent. lived in towns of over 5000 people. See his article on Jewish migration in the *Weltwirtschaftliches Archiv*, vol. 25, 1927.

[2] See Ruppin, p. 33.

[3] See Dubnow, vol. I, p. 134.

ships of the European peoples to the resources of the continent were altering so rapidly, there might possibly have been an end to the economic distinction between Jew and Gentile. For example, the occupations which had distinguished the Jewish communities in the Isthmian region for three centuries and more were now followed with increasing eagerness by the Gentiles. The Jewish and Gentile walks of life which had once been supplementary were

Fig. 3

now identical and often competitive. But the actual results as far as the Jewish communities were concerned were two. The nineteenth century was notable for the sharp exaggeration amongst them of many of the features which mark this period of economic change in Europe. Furthermore the natural trend of Jewish economic development was in one part of the Isthmus distorted by the establishment of the Pale of Settlement and the growth of arbitrary anti-Semitic legislation.

We are accustomed to associate the last hundred years in Europe with

phenomena which are of considerable interest to human and economic geographers: the rapid growth of population, the movement within states from the smaller settlement groups to the larger, and the more drastic migrations of large numbers of people overland and overseas. In all these developments the East European Jewish groups followed the same course as the other European peoples, but with greater intensity.

The growth of the Jewish population in east Europe during this period is more noticeable than that of any other people in the continent. Two Jewish scholars, Lestschinsky and Fishberg, think it unlikely that the total number of Jews involved in the early and medieval migrations exceeded a million, or that the population of the region east of Germany passed this mark until the middle of the eighteenth century.[1] Their numbers were kept low, partly by sudden persecutions, but more persistently by the unhealthy conditions of nucleated settlements especially in the small towns. Even during the period of their close connection with the rural areas, the Jews formed a considerable part of the town population of eastern Europe and suffered from the high mortality rates of such settlements. In the nineteenth century however the improvement in conditions was noticeable. Thanks to it and to the increasing range of urban occupations the Jewish groups began to multiply rapidly. Lestschinsky reckons that whereas on an average the Gentile population of Europe tripled in the years between 1830 and 1925, that of the Jews both in Europe and overseas increased nearly fivefold from $3^1/_4$ millions to 15 millions.[2] For three-quarters of the century also the great emphasis on the Jewish settlements in eastern Europe continued. At the end of the eighteenth century it had been reckoned that 44 per cent. of the Jews of the world were dwellers in east Europe: by 1850 this proportion had grown to 72 per cent.; the heaviest emphasis on this region was reached in 1880 when 75 per cent. of the total of Jews were registered in east Europe. At the same time, the numerical superiority of the Askenazic Jews, mainly of the Isthmus of Europe, was established even more firmly over the Sephardic Jews of the Balkans. At the beginning of the century the Sephardic Jews were reckoned as about 15 per cent. of European Jewry. By 1925 this proportion had sunk to 6 per cent.[3]

The extraordinary growth of the European populations whether Jew or Gentile was bound to result in vigorous shifts of population. Indeed the palliative of emigration to the New World was the means by which social and political explosions were to a certain extent damped down during this very difficult period of European history. In the Isthmian region the movement of the Jews to other lands bears the same relationship to the migration of the Gentiles as that of the Jewish growth of population to the rest. The movement of peoples everywhere was marked, but that of the Jews was excessive. In the years between 1815 and 1925 the British peoples headed, in absolute numbers, the emigrant movement from the Old World to the New; the Germans followed with rather less than half the British figures. The Italians came third and the Jews fourth, with a total of emigration for the hundred

[1] See Fishberg, p. 31.

[2] See Lestschinsky, *Weltwirtschaftliches Archiv*, vol. 25, 1927.

[3] See Lestschinsky, *Weltwirtschaftliches Archiv*, vol. 30, 1929, "Die Umsiedlung und Umschichtung der jüdischen Völker im Laufe des letzten Jahrhunderts."

years which certainly exceeded three million, and which was mainly drawn from eastern Europe.[1] In spite of the rapid increase of the East European Jews the percentage of emigrants to the whole was therefore phenomenal. Between 1880 and 1914, the peak years of Jewish movement, it was so overwhelming as to show plainly that the centre of Jewish activity was moving away from the regions east of Germany. By 1925 it was reckoned that only just over half the Jews of the world were still in eastern Europe, and that their main transplantation had been to the United States.

In addition to this great attention to overseas migration, there was during the nineteenth century a considerable movement of Askenazic Jews southward. The big Jewish communities in the Hungarian and Romanian towns of the Middle and Lower Danube basin to-day are mainly, though not entirely, the result of this nineteenth-century period of outward migration from the Pale of Settlement and from Prussian and Austrian Poland. The Jewish groups in the Middle and Lower Danube lands which were already established before the nineteenth century can be traced mainly to the expulsion of the Jews from Vienna at the end of the seventeenth century, and to the severe anti-Jewish policy of the Empress Maria Theresa in the mid-eighteenth century.

North of the Carpathians, the fortunes of the Jews varied according to their distribution in Prussia, Austria, or Russia. In Russia the restrictions on Jewish activity were not confined to the single establishment of limits to an area of settlement in 1794. They took the form of constant legislation throughout the nineteenth and early twentieth centuries, partly depending on frontier changes, now expanding and now contracting the districts allowed for Jewish habitation, now admitting and now excluding Jews from particular occupations. In the main however three principles are apparent in the penal laws. There was the desire to exclude the Jews not only from settlement in any part of Great Russia, but also from the main Ukrainian cities within the Pale, notably Kiev. Secondly there was the anxiety to divorce the Jews as far as possible from the peasant population and from farming occupations; and thirdly there was the attempt during the greater part of the nineteenth century to weaken Jewish settlement in the western frontier region between the Russian, Prussian, and Austrian Empires (see Fig. 1). The traces of that policy are still plain in one feature of Jewish settlement up to 1939 in the region which formed the old Pale. The proportion of the Jewish population to the whole is still highest not in the biggest cities of all, but in the biggest which were open to Jewish groups. The best examples of such towns are Pinsk with 75 per cent. of the population Jewish, Rowno with 71 per cent., Berdichev with 65 per cent., and Kishiniev with 60 per cent.[2] The tendency of the Jews during the nineteenth century to shift into the big cities is clear from the movements outside the Pale of Settlement, but it was thwarted in this particular region by human device.

Within the secondary towns of the Pale, the main contrast between Jewish activity of the nineteenth century and that of the preceding period is attention to industry. This began to rival the interest in import and export trade. In

[1] See Lestschinsky, vol. 25, 1927.
[2] See Lestschinsky, vol. 30, 1929.

this respect the Jews were no different from the surrounding Gentiles except that in Russia itself industrial development lagged behind the rest of Europe. Jewish industrial enterprise in the Pale was associated with the working of local raw materials, the hides which supplied the tanneries at Mohilev and the timber for the furniture factories at Bobruisk and Jitomir. The Jews were also active in the clothing industries working on imported cotton and wool in Vilna and Vitebsk, and in the textile factories of Łodz and Białystock. In contrast with the Jewish trading activities of the three previous centuries which had had an orientation mainly towards the west, Jewish industrial enterprise in the towns of Pale in the nineteenth century looked mainly eastward to the peasant purchasers of central Russia.[1]

Throughout this period in the Pale of Settlement however the strain of the growing population on the natural resources of the region was evident. The fact that the great majority of the people whether Jewish or Gentile lived very near the margin of existence was responsible for the increasing pogroms at the end of the century, which gave the final impetus to the enormous movements of working-class Jews to the United States between 1880–1914. In the great shift of East European Jewry at the turn of the nineteenth century, the groups in the Pale of Settlement accounted for more than half the emigrants. But in spite of this enormous migration the numbers in the Pale continued to overwhelm the possibilities of subsistence in that region even according to very meagre standards. There was noticeable poverty and unemployment amongst the Jewish groups and the recurrent hostility of the Gentiles was a symptom of the economic strain.

West of the Pale of Settlement the fortunes of the Jews were somewhat different, though it is only possible to comment on them very shortly. In the Hapsburg Empire the majority of the Jews were in Galicia (about 66 per cent. of the whole). The distribution of the Jewish groups there varied from east to west. The greater number of the Jews were in the Łwow (Lemberg) administrative area in the east, where the peasantry were Ukrainian and not Polish. There was also however a big community in Crakow. Even though there were no restrictions on the settlement areas of the Jews in Austrian Poland, the same pressure on the natural resources of the region was noticeable as in Russia. It was also relieved by extensive emigration, though the numbers from Galicia did not approach these from the Pale of Settlement.[2] In Galicia also the continuity of the traditional Jewish economics was traceable throughout the nineteenth century. Even though their share in industry was substantial, the Jews also remained as the distillers and tavern-keepers, an occupation which had been stamped out in the Pale.

In Prussia the majority of the Jews were inhabitants of the town and province of Poznań. In the hundred and fifty years between the Partition Treaties and the 1914–19 War, the Jews under German rule began to differ sharply from those to the west and south. In this part of East European Jewry two processes were noticeable. One was the excessive movement westward into the great cities, to Berlin first and foremost, and in addition to the

[1] See Ruppin, pp. 113–4.

[2] According to Ruppin (p. 50), the emigrants from Galicia averaged roughly one-third of those from Russia.

industrial centres of Saxony and the Rhineland. Here again however the Jewish groups had the same instincts as the Gentile, since the rapid growth of city existence in Germany in the nineteenth century was supported by the whole population. The other feature was the degree of assimilation of the Jews of western Poland by the Germans. By 1914 the Polish-speaking regions of the German Empire had a far less pronouncedly Jewish character than the corresponding regions in the Hapsburg and Russian Empires. During the same period also there began to be a class distinction in the emigrant movements of East European Jewry, which was based on the attractions of settlement in Germany. The majority of poverty-stricken, working-class artisans and traders from the Pale of Settlement and Galicia went far afield to the New World. The more prosperous minority moved to Germany to play a very important part in German cultural and economic life in the first quarter of the twentieth century.

In all East European Jewry in the nineteenth century there is one detail of peculiar interest to geographers. This is the development of the Jewish family name on the basis of geographical place-names. During this period the Russian, German, and Hapsburg governments at different dates enforced the system of surnames according to the Gentile custom amongst the Jewish communities.[1] These names meant very little to the practising Jews: they were used neither at home nor in religious ceremony, but merely for civil purposes. The choice of a surname was often made at random,[2] and, to save trouble, with reference to the locality. This habit makes it both possible and interesting to trace the original habitat of Jewish emigrant families. The most obvious examples of this practice are those drawn both from big cities and smaller towns. Kracauer is a common Jewish surname for civil purposes; Posnanski is another for the Jews of Prussian Poland; Kalischer and Rawiczer are others which occur fairly often, and there are many more attached to the town and village names of East European Jewish settlement areas.

The strained circumstances of Jewish settlement both in the Russian and in the Hapsburg Empires were bound to alter fundamentally with the break-up of these political units during and after the 1914–18 War. The restrictions in the Pale were destroyed almost at once after 1914 however, because this area rapidly developed into the Eastern Front of actual fighting. The traditional limitations to settlement and occupation were untenable in the resulting chaos.

In the twenty years between the end of this struggle and that beginning in 1939, there is again a distinction to be made between the fortunes of the Jews within Russia and outside it, even though the changes in frontiers had enormously decreased the number of Jews under Russian rule.[3]

Within the Soviet Union two forms of Jewish activity became noticeable in the first years after the Revolution. Jews were freely admitted to the great

[1] The practice of family surnames is much older amongst the Sephardic than amongst the Askenazic Jews. It was the latter who were affected by the decrees mentioned above.

[2] For the whole significance of the adoption of the civil names see Hyamson's article in *Valentine's Jewish Encyclopaedia*, London 1938. See also the article on "Names" by Jacobs, in the *Jewish Encyclopaedia*, New York, 1905.

[3] Fishberg reckoned in Russia in 1911 roughly 5,100,000 Jews, of whom 3,500,000 lived in the Pale of Settlement. Ruppin reckoned in Russia in 1926, 2,750,000 Jews.

cities of Russia, and the distribution of Jewish settlement spread accordingly with great speed to Leningrad, Moscow, Kharkov, and Kiev: the percentages of Jewish groups in the two last-named towns in 1920 showed the eagerness of the Jews for this privilege. Jewish small land-ownership also developed during the N.E.P. period of peasant proprietorship in Russia between 1920 and 1929. This movement was stimulated by the drastic checks to small trading with the establishment of the Soviet economic system in industry and commerce, but it was considerably damped again after 1929, when the ruthless programme of collectivization was also applied to agriculture and pastoralism. It is also interesting to see that in their policy of Jewish settlement areas, the Soviet Government took over some of the experiments of the Imperialist regime. The planned colonies for Jewish settlers in Ekaterinoslav and the Crimea after the Revolution were the successors to those in Kherson attempted at the beginning of the nineteenth century and associated always with the Tsar, Nicholas I. But in neither case were the numbers of Jews affected at all considerable. Much more important however was the larger scheme in Birobidjan in the Amur basin in eastern Siberia, though it is still difficult to comment on it in detail for lack of reliable information.[1]

The eastward spread of Jewish settlement in Russia was accompanied by a renewal of emigration from the country as a whole. This was in part a resumption of the steady movement to the New World which had been penned up during the war years. It was common in this respect to the whole of East European Jewry and persisted until the passing of the various Immigration Restriction Acts.[2] But it was also particularly active from Russia on account of the intolerable conditions created for many Jewish groups during a long period of warfare and violent economic change.

In the whole of eastern Europe there was also noticeable a decline in the rapid rate of population increase which had characterized the greater part of the nineteenth century. This process of diminution had indeed been at work since the beginning of the twentieth century. Also just as population increase amongst the East European Jews had been in excess of that in the whole of Europe in the preceding generations, so the drop in the Jewish birth-rate in the Pale, in Galicia, and especially in Romania was more marked than amongst the Gentile population.[3] The conclusion to be drawn from the population statistics of varying reliability is that the renewed pressure on natural resources which became obvious again in east Europe after 1919 was not due any longer

[1] A short account of the settlement at Birobidjan is given in Hope-Simpson, 'The refugee problem,' pp. 493–4, Oxford, 1939. The numbers in the town of Birobidjan itself in 1938 were estimated at 18,000. The potential mineral and farming wealth of the area seems certain, but its development is cramped at the moment by the uncertain political conditions in the Far East. According to the account in *Valentine's Encyclopaedia*, there were in 1936 about 65,000 people in the Jewish autonomous region of Birobidjan: 18,000 of these were Jews, and 13,000 of the Jews lived in the town of Birobidjan itself.

[2] The main restrictions on immigration were the laws passed in the United States in 1922 and 1924. The Quota Act of 1924 was the more severe and reduced Jewish entry to the States to an annual average of 10,000.

[3] See Fishberg, chapter X.

to phenomenal increases in the Jewish groups. It was accounted for however by the disappearance of the facilities of large-scale emigration in any form after 1924. For Jew and Gentile groups alike, even the continued drop in the birth-rate could not compensate for the absence of chances of settlement in the New World. Hence during the last ten years in the region east of Germany and west of the Soviet Union there has been something like a repetition on a small scale of the conditions between 1880 and 1914 in the Pale of Settlement. The pogroms which began in 1880 were induced by the top-heavy economy of the Pale of Settlement into which were crammed the Jewish groups in competition with and resented by the Gentile population. This unsatisfactory situation, which was getting worse every year and which was only partly alleviated by enormous migrations to America, was violently disturbed by the 1914–18 War.

After 1924, the Jewish groups of eastern Europe outside the Soviet Union were confined within smaller national frontiers by immigration restrictions. They were all in regions where the predominance of peasant populations and where very recent and drastic political and economic changes left but a small margin for times of material hardship. It was indeed as difficult for the Jews in many ways to fit themselves into the political fragmentation of Europe after 1918 as it had been for them to gain a living amidst the restrictions of the Russian Empire.[1] The problem of the regions of abundant Jewish settlement became especially apparent during and after the years of economic crisis (1930–34). When the standard of living dropped and trading activity shrank in Poland, Hungary, Romania, and Yugoslavia, the victims of general ill-will again were the Jewish groups, just as they had been in the Pale of Settlement in the difficult years before 1914. Where in Poland also the main problem of East European Jewry was being partially relieved by industrial development after 1936, the prospects for the three million Jews have been hopelessly wrecked by the German invasion of 1939.

It is possible only to give the barest indication in this paper of the geographical side to the study of these Jewish groups. One can do no more than point out the extreme importance of the region east of Germany, and of the period of Jewish development there between the sixteenth and the twentieth centuries. Whatever the attitude of the surrounding groups to the Jewish settlements, there is no denying the contribution of the Jews to contemporary economics. Whether as tax-gatherers, distillers, small traders, millers, manufacturers, or timber merchants, they had a lively sense of the resources of the Isthmian region and knew in spite of many limitations how to make use of them.

A very brief search through the documentary sources suggests that further work on the subject might be useful on a regional basis. For this purpose the material might be classified roughly under the following headings. There is a mass of information quite unsifted in the Responsor Literature and in the Tośafoth (in Hebrew). Secondly, there are the works of many Yiddish writers,

[1] In Poland however, where the Jews were most numerous, Jewish activity was favoured by the comparative weakness of the Cooperative Societies, which enabled the Jews to act as middlemen to the peasants, and by the encouragement to industrial enterprise in which the Jewish share was considerable.

and in particular those of Peretz, "Sholem Alejchem," and Mendale. Thirdly, there are the secondary sources of the periodicals and *Festschriften*. From these records it should be possible to draw geographical studies of distinctive regions such as the Middle Niemen basin, Bohemia, or eastern Galicia; of big cities such as Crakow or Prague; and of lesser towns like Kalisz or Berdichev. A good deal of interesting economic and historical geography could also be extracted from research on specific Jewish economic activities. One could cite the milling and grain trade enterprises in the grassland region of nineteenth-century Russia as an example, and also the development of much of the warehousing system in central and eastern Europe from the tiny Jewish stores of varied imports to peasant purchasers. Finally the whole subject of Jewish settlement and development east of Germany could be made far more interesting from the geographical point of view with the addition of cartographical studies. This last kind of research would however be extremely difficult to attempt except in a very generalized form on account of the notorious unreliability of the statistics of Jewish populations and movements over the whole course of history.

The author wishes to acknowledge with thanks the help of Mr. H. M. Loewe, of Queens' College, Cambridge, in compiling this paper. Thanks are also due to Dr. Samuel Krauss, formerly in Vienna, and to Dr. A. F. Leschnitzer, formerly in Berlin (now both resident in Cambridge).

DISCUSSION

Before the paper the CHAIRMAN (Lord MOYNE) said: Miss Wanklyn, who is giving us a paper this afternoon on the geographical aspects of Jewish settlement east of Germany, is known to many geographers in this room for the varied work she has done in connection with our subject. Miss Wanklyn spent several years abroad in the study of international affairs and is now lecturing in the School of Geography at Cambridge. She has chosen to-day a subject of great interest, because the problems of the peace settlement are in the minds of all of us and the past history of Jewish migrations and tribulations will no doubt have a considerable bearing on the solution of the problem of their future.

Miss Wanklyn then read the paper printed above, and a discussion followed.

Professor E. G. R. TAYLOR: I think I speak for every one present in congratulating Miss Wanklyn on the extremely lucid way in which she has expounded an extraordinarily complex subject.

Miss Wanklyn tells us that one of the occupations open to the Jews in certain parts where they settled was that of tax collector, and it occurred to me that, if the income tax collector and the rate collector and also the bank manager in this country were forced to wear a special dress and their occupations were made hereditary, we should possibly have some direct understanding of how pogroms occur. I recall also my experience in the Pripet marshes, where I visited some of the great historic landowners. It was very clear that the Jews were completely out of the picture of human life as those people saw it, though there was an enormous nucleated settlement of Jews, a great straggling village, at their gates.

Mr. E. GORDON GODFREY: I should like to join Professor Taylor in congratulating Miss Wanklyn on her paper and to say how much I have appre-

ciated it. Although my association with Poland is slight, it is quite recent. In the view of those with whom I came into contact two years ago and who were competent to express an opinion on the matter, a remarkable change had then come over the country and the Jews were beginning to be recognized as playing a very important part in its life. The general impression I gathered was that some of the Jews were still very unpopular in Poland, but none the less there was a recognition of their organizing ability; and it struck me as significant that a number of English and American Jews were going back to Poland for the express purpose of organizing industry. I do not think one ought to stress the point too much, but perhaps one of these days we may see returning to Poland a greater number of Jews from the more educated West for that purpose.

Mr. W. G. EAST: I should like to say how much I have enjoyed listening to Miss Wanklyn's paper and how important I feel it to be that this kind of subject should be discussed in the Society. An eminent French geographer, Professor Ancel, said only a few years ago, in a preface to a book, that Europe was the *terra incognita* of our times. I feel that that is only too true and that now is the time to study more intensively this complex, varied, and troublesome, though small, area of the world.

I should like to congratulate Miss Wanklyn on her historical analysis. She said however that violent dispersal of the Jews did not seem to be part of human geography; human geography was only concerned if they were attracted by the nature of the land. I cannot see the distinction. If the Jews moved anywhere it seems to me that that movement and their subsequent settlement is part of human geography, regardless of why they were driven to move, and if Miss Wanklyn will deal with that issue in her reply I shall be very grateful.

It seems to me that one of the most important general points that emerges from the lecture is that in medieval times the Jews were presumably free men in a feudally organized eastern Europe. If that is so, it is rather interesting, because freedom then was a rare thing, confined to men in the towns and to the Polder region, for instance, where peasants were free because otherwise they would not work in the reclaimed marshlands. In the same way, serfs were often given freedom to attract them into a new town. Would it be true to say that the Jews stood outside the feudal system throughout the Middle Ages and were, at least potentially, the nucleus of a middle class engaged in industry and commerce? On the other hand, the lack of a well-organized middle class, standing between the aristocracy and an unfree peasantry, was one of the chief political weaknesses of eighteenth-century Poland.

The CHAIRMAN: I could only wish that Miss Wanklyn had not cut short her lecture as she did, because it was most interesting to hear how she related geographical factors to the social history of the Jews. We know that in recent years anthropologists have been telling us that the Jews are not at all a pure race, that from the very earliest times they have had very large accessions of numbers from surrounding peoples. One of Freud's last books set out to prove that Moses was an Egyptian, and one has only to travel anywhere in Anatolia to realize that features which are so often associated in our minds with the Jews are typical not of Arabs and other Semites but of the ancient Hittites and the modern Kurds and Armenians. Under the Roman Empire the Jews received an enormous accession of strength from proselytizing among the very heterogeneous elements brought in by conquest and otherwise. Later Turanian elements were added from the Khazars with whom they were in contact. I think the mixing must have continued, judging from the difference in type between the Sephardim and the Askenazim. The Askenazim are more like

the neighbouring Slavs in their physical character, while the Sephardim often have oval faces and fine features. But if they are not a racially pure type, the Jews have been driven together into one of the strongest cultural and social communities in modern times, and I suppose it is really that which has caused the very complex problems of Jewish history. It is very important nowadays to see how they can be given scope for life in the future. Miss Wanklyn suggested that the Jews had never taken much to agriculture. I think she said that she did not altogether accept the suggestion that they lost very heavily to surrounding agricultural populations. But though the Jews have lived in the towns—no doubt largely as a result of the catastrophic pressures of which Miss Wanklyn told us—they certainly seem to be making a success of agriculture in Palestine, and one hopes that, if they are given a fair opportunity and territory where they will not be in the traditional position of a racial minority, they may be able to have a happier time in the future.

I should like, on your behalf, to thank Miss Wanklyn for the most interesting paper which she has read to us.

Miss H. G. WANKLYN: With regard to Mr. East's comments, I agree with him that it would be unwise to deny that catastrophic dispersions of population have a certain geographical interest. I think the views which I put forward that seemed to disprove this argument arise really from contact during the past month or so with Jewish scholars who are very anxious to avoid emphasis on catastrophe. There seems to be a certain revulsion now amongst some Jewish historians from the account of Jewish fortunes which leaps from disaster to disaster and which is a tale of woe: they try to emphasize instead normal periods of development. The accounts of the normal struck me as more interesting from the geographical standpoint, though one cannot deny the catastrophic episodes a place.

The second point which Mr. East mentioned was the position of the Jews in Europe during the Middle Ages as free men. That I cannot discuss competently in the light of my own work: I can only pass on the discussion that I had with Mr. Loewe on this subject. He was anxious throughout to stress the different position of the Jews in different regions. He thought it difficult to make a general comment even for the Isthmian region, let alone the whole of Europe. He was anxious to make it clear that on each estate, in each town, in each geographical region, the position of the Jews varied. He had the feeling, which I think many of us have when considering regional geographical studies, that one must begin with the smaller units, and from these work to more general conclusions. It would be unwise to make any general assertion on the position of the Jews as free men or as a middle class during the medieval period.

MADAGASCAR IN 1939

C. R. PORTER

Meeting of the Society, 13 November 1939

AS a retired surgeon and amateur painter in water-colours, I was able in February 1939 to visit parts of the 1000-mile-long island of Madagascar, which a century ago was strongly influenced by English missionaries and traders, then suffered for thirty years the tyranny of an anti-Christian queen, and has now been a French possession for some forty-five years. My paper is simply a sketch of what I saw in the places I visited, and its value as a record lies in its being dated.

Along the eastern side of Madagascar, extending almost from end to end, there is a series of mountain ranges from 6000 to 8000 feet in places, which form the watershed for the entire island. From them rivers flow eastward into the Indian Ocean and westward into the Mozambique channel. In the north the mountains are abrupt and rise almost directly from the sea; here is the highest peak in the whole island, Tsaratanana (9450 feet). Farther southward the mountain range lessens in height and, except for the Ankaratra massif, south of the capital, Tananarive, becomes lower and less abrupt, gradually dying out towards the southern end of the island where there is a narrow coastal plain. At one point on the usual steamer route from Durban to Mauritius, the southern coast-line is seen if weather conditions permit; several hills about 1000–1500 feet high lie near enough to form landmarks for navigation. On the western side of the island there is a great plateau, also mountainous, about 3000 feet high in its central part and sloping off gradually towards the west and south. Nearer the west coast there are broken mountain ranges, lower than those on the east, leading down to Maintirano in the more northern district and to Tuléar in the south-east.

The central plateau is characterized by a rather drier and more temperate climate with a more moderate seasonal rainfall than that of the coastal areas. From late May to early September there is hardly any rain and the temperature may fall almost to freezing-point at night. Traditionally the eastern and central parts of the plateau were once densely forested, and this is borne out by the occasional finding of large logs buried in the swamps. Agriculture by the cutting and burning method, coupled with cattle grazing, has completely deforested it and it is now mostly open grass land. This region is comparatively healthy and there is said to have been little or no fever here prior to the construction of the railway from the east coast to Tananarive. On the western slope of the plateau and in the extreme south the climate is hot and semi-arid to arid. The ground is covered with clumps of low trees and thorny scrub interspersed with stretches of grass land. In many places it is difficult to obtain water. In spite of the dryness of the climate in this region there is said to have been much fever, making it unhealthy for Europeans.

The purely French population of 25,000 consists of the Governor-General and his staff, military officers, non-commissioned officers, and garrison troops.

(Some of the latter however are Malagasy, and fought in the last war in France.) All the important civil servants and many business men are French. There is a supplementary foreign population, about 14,000, consisting mainly of Chinese, Hindus, and other Asiatics, the majority of whom are employed in small retail business. The remainder of the population of the island, about 3,800,000 in all, is divided amongst seven tribes, the most important of which is the Hova, numbering about 900,000.

The origin of the several tribes has long formed the subject of lively discussion. The geographical position of the island suggests an African immigration for the Malagasy, but while Crawford looked upon the Malayan immigration as subordinate and described the Malagasy as genuine negroes, J. Sibree laid excessive stress on the Malayan character, allowing the African, Arabian, and Indian elements to appear as subordinate to the Malayan immigration from the east. In 1886 Alfred Grandidier formed what seems to be the most correct estimate of the origin of the Malagasy tribes. He treats them as a mixture of the two elements, ethnographically and anthropologically entirely distinct, the one being the Hova settled in the central province and on isolated points on the coast, and the other made up of the tribes which inhabit the rest of the periphery of the island. Grandidier regarded the Hova as genuine Malays who have made their way into the country from Java or a region near to it. The negroid elements, according to him, point to the district of Indo-China in their customs and religious conceptions. Other authorities, such as Dr. C. Keller, believe that the second element is of African origin.

As one leaves the east coast and enters the district of the Sakalava on the west, the African stamp of the population becomes unmistakable. Opinions are still divided as to whether the Hova were there before or after the African population, but the influx of Asiatic peoples possibly took place over a stratum of already existing Africans. The domestic cattle of Madagascar undoubtedly come from the African continent. They are called *ombe*, from the Swahili *ngombe*, meaning ox. Dr. Keller mentions that he made an anatomical examination of their skulls, which showed that they belonged to the Sanga breed, found as far away as Abyssinia.

Linguistically, Gautier is of the opinion that the evidence of Malagasy language being related to the Malayo-Polynesian group is absolute, but that the bulk of the people of Madagascar are akin, not to the Malays, but to the Polynesians and especially to the Papuans. Though the language of the country is Malagasy, the general policy of the French Colonial Government is that French shall be taught in all the schools and shall be the language of the country for rich and poor alike, and that Malagasy shall ultimately be stamped out. Needless to say this will take many years to achieve, if it is ever successful. At the present time, though many of the better educated Malagasy speak good French, and many of them English as well, the farther one gets away from the towns and villages the less French is spoken. In fact, except for those in authority in any capacity, Malagasy is the prevailing language, and where one gets into the scattered country districts, and certainly in the forest belts, French would very rarely be understood. The usual morning or evening salutation, which I acquired with some difficulty, was very occasionally in a

village answered by the French equivalent, but it was with some pride that it was so given. I also noticed that even in the chief post office in Tananarive the French spoken by one of the male counter clerks was very difficult to understand. The theological teaching and reading of church services and preaching in the English Protestant mission is all in Malagasy, and there seems to be no specific objection raised by the government.

The diversity of the Malagasy peoples is least apparent in their language, for though different dialects occur, yet Malagasy, the Malayan speech of the Hova, the most talented tribe of the island, is in use everywhere. It is quite pleasant to listen to and has a charm of its own, though at first the length of the names and words seems almost unsurmountable and all the syllables appear to have the same quantity. In the geographical names it is difficult to recognize European origins; thus the coast town of Tamatave is, or was, called "Toamosina," a corruption of the Portuguese name of São Tomaso, and Fort Dauphin is called by the Malagasy, "Faradofay."

For purposes of classification, the tribes of Madagascar may be roughly divided into Malayan, or Polynesian, and African, or Negroid. The former inhabit chiefly the central highlands, but isolated colonies live on the coast as well, especially in the east. The most important of them are the Hova. They have retained their Malayan character very markedly and had been the dominant tribe, forming the aristocracy of the island, for many years up to the conquest in 1896. This tradition is still very strong, and instances of the deference paid by other tribes to the Hova were pointed out to me on several occasions. In a big publishing house in Tananarive, where all the printing is done for the London Missionary Society, the Hova, whether he is in a subsidiary position in the printing or other workshops, receives a different and more respectful salutation, morning or evening, from those of other tribes.

Some of the African or Negroid tribes, of which the Sakalava in the west and the Bara in the south were the most important when tribal wars were common, have kept their African characteristics almost unmixed, while other tribes, such as the Betsileo, Tanala, Betsimisaraka, and the Antanosy, are of mixed blood, sometimes showing the Arab element.

As regards physique, both men and women are below the usual height and of rather slight general development, this being more marked in the men than in the women. The latter are perhaps smaller as a whole when young, but as they approach the age of forty to fifty appear to improve in both mental and physical well-being; the men, on the contrary, seem to deteriorate more quickly as they get older. The skin is light in colour, resembling the Malay, the hair long and rather straight; in the younger women particularly it is parted in the middle and brought down on each side of the head in plaits rolled into a neat bun over each ear. Some of the men and many of the women, especially when between fifteen and twenty-five, are distinctly good-looking. As regards dress, in the women at least, the French influence has a marked effect. The well-to-do Hova have adopted the European dress for both sexes, but the majority of the men of the middle and poorer classes adopt the *lamba*, usually coloured, and either trousers or a loin-cloth and a shirt; the women nearly always wear the white *lamba* covering a bodice and a skirt to just below the knees, and, if they can afford them, shoes.

The *lamba* is the garment which gives complete distinction to the native of Madagascar: it is a long shawl drawn round the shoulders with one longer end thrown artistically across the left shoulder and allowed to hang down at the back. The *lamba* is far more frequently white than coloured, so much so that the usual crowd seen in a market-place is almost a mass of white. This description of course applies chiefly to the more civilized villages and the towns; in some tribes the men wear only a loin-cloth, and the women the *lamba* and some kind of a skirt.

The Malayan or Polynesian group forms the more striking element in the population as it appears to the casual visitor to the country for the first time. The Negroid or African types vary considerably, and though recognizable by their definite facies it is more difficult to distinguish one tribe from another. On the whole they are more often of finer physique, and this was noticeable in some of my carriers in the journey by *filanzana* I took in the north. By all accounts this finer physique is specially noticeable among the Sakalava in the west who are more definitely of the African type.

The general standard of education is certainly low. In the towns it is higher, as the educated classes tend to stay in them, becoming shop assistants, waiters in hotels and cafés, or occupying positions in the colonial service and teaching. Those who have been educated in the French secular schools talk French, but the farther one gets away from the towns and villages the more the general low standard becomes obvious. A glance at the map of the island will show how few are the towns and even larger villages, where educational advantages are available.

In hotels in the towns, which are mostly frequented by the all-white French population, one is given a French meal: this varies considerably in quality, but on the whole the food is not very good, even in the better-class hotels. The native in his own home, if in the educated class, will imitate the French cooking. But the servant girl who goes home on a Saturday night to her people will probably ask her mistress if she can take something home to supplement the home dietary, which is often of the poorest quality. The foundation of the native diet is rice, manioc, and other vegetables, with the usual tropical and sub-tropical fruits; occasionally pork and chickens, ducks, and geese make up the food of the country people, varying with their means.

The village folk live on their crops or as agricultural labourers. There are many districts where cattle form the staple industry. Thousands of natives are employed in the rice-fields, for Madagascar produces all the rice it wants.

Native crafts consist chiefly of weaving, mat-making, raffia work of all kinds, pottery, tin-ware, and lace-making. I was astonished to find that the degree of drawing and painting, both in sepia and water-colour, had reached a very high standard among some of the better-known artists among the Malagasy. All these crafts were originally taught by the first missionaries who came to the country and have been encouraged by the French. In this connection, mention must be made of the Académie Malgache, a scientific society which was founded and sponsored originally by General Gallieni for the study of the scientific aspects of Madagascar.

As far as I could gather there is no national game played in Madagascar, and

of games of chance I saw none, though among the educated people, chess, draughts, and other European games are enjoyed.

The Malagasy have a definite taste for dancing and music. There is hardly an important village in Merina, the district of the Hova tribe, where there is not a troupe of dancers and musicians. The musical instruments are the *valiha*, an original Malagasy musical instrument made from the bamboo, a primitive violin with two strings, a tambourine, and a small flute. Dancing is not confined to the Hova only but is prevalent all over the island.

The flora and fauna of the island have a special interest. The tradition of "The land of the man-eating tree," by which name Madagascar has been known since pre-historic times, is referred to by Chase Salmon Osborn, who quotes a lurid and dramatic description of the tree given by a traveller in the country in 1880.[1]

The traveller's palm, really a gigantic banana (*Urania speciosa*), is a very noticeable landscape feature. It grows to a great height, especially in the forests, where it may attain 90–120 feet. The name is derived from the fact that water collects in the large branches and may be obtained by piercing the leaves near the stem. Other noticeable palms are the coconut, screw palm, and especially the raffia palm which is so abundantly used in the making of hats, fans, etc. The many fruits which one could buy very cheaply on the station platforms on the railway included oranges, pau-pau, mangoes, bananas, and delicious fresh lichese.

One thing which strikes the traveller in Madagascar is the complete absence of big game. The only mammal of any size is the lemur, which gives to Madagascar a special significance in the biological world. The Lemuroids predominate in the island, the most remarkable being the *Chiromis madagascariensis*, or Aye Aye, which is found only in the forest on the eastern side.

Mention might be made of the recently extinct ostrich-like land bird, the *Aepyornis maximus*. A gigantic egg brought to Europe in 1851 and exhibited at the Académie des Sciences by the French zoologist, Geoffrey St. Hilaire, measured 12 inches in diameter with a capacity of nearly 2 gallons. Since then many perfect specimens have been obtained, and a heavy shin bone 25 inches in length was found in 1867 by Alfred Grandidier.

Madagascar was originally discovered by the Portuguese, Diego Diaz, in 1500. On the return of Diaz to Portugal the King concluded that the island must be Madagascar, about which he had read in Marco Polo's 'Voyages.' Polo however had not been there, but believing his Arab informants, ascribed to an island what was really the kingdom of Mogadisho, on the east coast of Africa. Mispronouncing and mis-spelling the name he coined the word Madagascar, by which name it has been known ever since. For the next two hundred years the island was prominent chiefly as a pirate refuge. John Plaintain for example lived there from 1720 to 1725, and so successfully waged war against the chiefs of the various tribes, mostly in the south, that he proclaimed himself King of Madagascar.

From 1800 onwards European and especially English influence brought

[1] C. S. Osborn, 'Madagascar,' London, 1925.

the Malagasy to the high level of commercial, and in many cases administrative, attainment which they exhibit at the present day. The most prominent reigning sovereign was King Radama I who favoured the English, both for the introduction of Christianity and for their interest in the commercial possibilities of the country. He was followed by Queen Ranavalo I, called Ranavalo the Cruel, who reigned for thirty-six years. Her rule was marked by the great cruelties perpetrated on the native population, mainly owing to the fact that so many Malagasy had by that time adopted the Christianity to which she was violently opposed. Her motto was Madagascar for the Malagasy. She made herself acquainted with the most modern means of furthering the country's prosperity commercially, and kept a Frenchman, Laborde, prisoner in the country because he was a clever mechanic and had an inventive mind of a high order. She died in 1861, and was succeeded by Ranavalo II and III, both of whom were to a great extent under the sway of their prime ministers. Through the influence of Queen Victoria Ranavalo III encouraged the return to Christianity and the missionaries were allowed to come back to the country.

Then in 1896 General Duschesne conquered the Hova, and established a French Protectorate, which became a French colony. The French Government were singularly fortunate at this juncture to have the services of General Gallieni, whose experience in French Indo-China fitted him admirably for the post of the first Governor-General of Madagascar, and of his friend Colonel Lyautey, as he then was, who had worked with him in the East. At the time 93 per cent. of the commerce of the country was in foreign hands, 90 per cent. of the country was unexplored, and nearly all the subordinate officials spoke English.

The history of the people of Madagascar, especially during the last 120 years, must explain the extraordinary contrast in the types of Malagasy met with in different parts of the country. These vary from the most highly intelligent manager of a department in a large printing and publishing business, the highly placed official in government colonial service, or a teacher in a theological college of one of the missions, to the complete heathen savage one might meet in an outlying village or in the forest belts, wandering about the country looking for a job as a manual labourer, dressed in a loin-cloth and carrying a spear. There is no doubt that certain tribes have been pre-eminent in mental capacity, and of these the Hova were the dominating influence long before Europeans had settled to any extent in the island. These were years of constant inter-tribal wars amongst a people who were ready to fight on the slightest provocation. The Hova thus became the paramount tribe, both intellectually and in warlike prowess, and it was from them that the kings and queens were chosen for generations; in whatever position the Hova occupy they still have a certain deference paid them by members of other tribes.

The chief port of entry for Madagascar is Tamatave on the east coast, where there is a good harbour and anchorage, though big ocean steamers do not come alongside the wharf. This is the only port connected by railway with Tananarive. When I landed in February 1939, Tamatave, now a typical French colonial town, was hot and moist. The old part still exists, but in

45°
50°
Grande Comore
Archipel
Mohéli
Anjouan
des Comores
Dzaoudzi
Ile Mayotte
Diego Soarez
(Antsirana)
Nosy-bé
Hellville
Analalava
15°
Majunga
Maroantsetra
Bté d'Antongil
Maevatanana
Ile Ste Marie
Maningory
Lac Alaotra
Andreba
Maintirano
Tamatave
Tamanarive
Brickaville
Moramanga
Antsirabe
20°
Morondava
Ambositra
BETSILEO
Mananjary
Fianarantsoa
Manandiana
Manankara
Vohipeno
Farafangana
Tuléar
Bté de St Augustin
Betroka
MAHAFALY
ANTAVARATRA
ANTANOSY
ANTANDROY
Fort Dauphin
Taihombe
Ambovombé
Cap Ste Marie
25°
MADAGASCAR
Miles
50 0 50 100
Forests
Railways
Tribal names BETSILEO
Heights in feet

C. R. P.

Village street, Imerimandroso

a very dilapidated condition, the houses being built of wood with much admixture of galvanized iron and beaten-out petrol tins. There is one hotel to accommodate Europeans near the sea front, but it is very noisy and the food is poor.

Transport is by *pousse-pousse*, or rickshaw, and cars can be hired.

The population of Tamatave is about 20,000, including about 3000 French and over 1000 foreigners. The modern part of the town extends along the sea front mostly at the southern end, the chief and only business street being the Rue de Commerce, while the actual sea front, the Boulevard Gallieni, stretches about a mile and a half to a lighthouse at the north end, where the tarmac road ceases. Most of the residential part of the town faces the sea, and so gets the benefit of the evening breeze which blows from the east. The houses of the French residents are well built, mostly of cement, with the usual verandahs and balconies, strong enough to withstand the cyclones which on this coast are felt with their full force. The effect of a cyclone of rather exceptional severity about six years ago is still obvious in Tamatave to-day; the trees, mostly palms, along the sea front were all blown down and the young ones have some way to go before the Boulevard Gallieni can justify its name.

The bay is enclosed by a reef about 2 miles out, which permits perfectly safe bathing at any state of the tide.

On landing in Madagascar one is told never to go out for a moment without a sun-helmet: the "sun in Madagascar is much more powerful" than elsewhere in the same latitude, 12°–25°. The wearing of helmets, certainly by all the civil servants, must be a government regulation of very long standing. The Malagasy men, on the other hand, wear a rather broad-brimmed felt hat and are seldom seen without it.

There are only about 534 miles of railway in the whole island; it is all narrow gauge and the small locomotives burn coal brought from South Africa. The first line from Tamatave to Tananarive was completed in 1913, the distance being 230 miles; the branch line from Moramanga to the north was finished in 1923, 105 miles; and there is a line south, with its terminus at Antsirabe, 95 miles. Quite recently a new line, about 100 miles, has been laid to connect Fianarantsoa with the east coast at Manankara; this will mean a very considerable advantage to Fianarantsoa and the country south of that town, both for goods and passenger traffic, provided improvements in harbourage at the port of Manankara come up to expectations.

The railway from Tamatave to Tananarive for the first 50 miles runs parallel to the coast-line and practically at sea-level to Brickaville. The country is typical of any tropical coast-line, and for a great part of the way the line runs between the sea and a succession of lagoons which considerably add to the beauty of what would otherwise be rather monotonous scenery.

At Brickaville the railway turns inland and soon begins the long climb to what might be described as the first step up to the central plateau. The farther one leaves the coast the more striking the scenery becomes. The hills gradually become treeless and the mountainous nature of the country is marked by outcrops of granite, and the line, with many hairpin bends, ascends precipitous valleys accompanied by the river Vohitra, which flows

often nearly 1000 feet below the railway in almost a succession of waterfalls. The first step consists of a level plain, well watered and showing evidences of cultivation of rice and maize, till Moramanga is reached. Here there is a branch line to Andreba at the southern end of lake Alaotra. Moramanga lies at 3000 feet above sea-level, and is one of the chief centres for the culture of manioc and tapioca. It is also well known for its saw mills and for the exploitation of graphite.

After Moramanga the railway line mounts again among the hills which become even more precipitous; the country is wild and desolate with very few human habitations. Another belt of forest is passed before one reaches the higher plateau and evidence of French afforestation is seen in large plantations of eucalyptus trees by the side of the railway line. It takes thirteen hours to cover the 230 miles from Tamatave to Tananarive; as the crow flies it is approximately 125 miles.

The complete change of scenery again once the central plateau is reached is very noticeable. A level plain with low rounded hills takes the place of mountain gorges and rushing waterfalls; there are small villages and acres of cultivated land, mostly rice with the usual irrigation channels and well-ordered terraces where the contours require them.

Tananarive is a large up-to-date city, with a population of 120,000, of which according to recent estimates 6440 are French and 936 foreigners. It is beautifully situated, the highest part of the town being at an altitude of about 4400 feet. It is laid out in the shape of a V, the apex pointing south-east being crowned by the Palace. It is not unlike Edinburgh, with its hundreds of steps and steep paths, with the old palace dominating the highest part of the town, but the general tone is one of a pleasant reddish-brown brick relieved here and there by the deep green of the trees in parks and gardens. Bricks and tiles are made in many parts of the country and most of the houses in the town, and even in the scattered villages, are built with these, the roofs having a very sharp angle to carry away the heavy rainfall. The tone of the brick and tiles comes from the nature of the soil which has given to Madagascar the name of "L'île Rouge."

To the casual visitor Tananarive has a fascination not only for its historical associations and its commanding position, but for the strange contrast between the complete modernity of the French population, their motor cars, buses, and lorries, the up-to-date shops and public buildings, and the Malagasy with their native dress, their language and their deep-rooted tribal customs, and, in the more outlying parts of the town and its suburbs, still the wooden houses built as they have been built for generations. The *pousse-pousses* bring an air of the east, but even these, gaily coloured and pulled by men with the *lamba* over the rest of their clothing, seem to belong peculiarly to Madagascar, though they were probably introduced by men like Gallieni and Lyautey with their experience in the East.

The highest part of the city culminates in the Rova or Palace of the Queen which is now used as a museum, the several buildings being surrounded by low walls from which a most extensive view can be obtained of the whole of the surrounding country. As the Castle in Edinburgh dominates the city so does the Royal Palace in Tananarive, and it was from here that the victims of

Ranavalo I were thrown wrapped in sacking, to fall 200–300 feet below; at dead of night their remains were taken away and buried by their friends. In the month of March the clarity of the atmosphere in the morning reveals a panorama which includes the massif of the highest part of the central volcanic mountain chain, the Ankaratra. March being towards the end of the rainy season, the mornings are generally brilliantly sunny while in the afternoon and evening the heavy storms roll up, and few are the days when a heavy thunderstorm with torrential rain does not descend on the city and the neighbouring country.

Owing to the infrequent train services on the existing railways and limited facilities for motor transport, careful organization was necessary if I was to see as much as possible of the country in the short time at my disposal. This was very kindly undertaken by Mr. Conolly, the head of the London Missionary Society's publishing firm, who made all the arrangements for my visit to Fianarantsoa in the south and to lake Alaotra in the north. The only means of access to Fianarantsoa is by railway to Antsirabe, about 100 miles, and then by motor bus.

The railway journey to Antsirabe was quite comfortable in a well-upholstered first-class carriage of the corridor type, from the wide windows of which splendid views of the country could be obtained. The train meanders along the plateau at a level of between 4000 and 5000 feet. Many villages are passed and there is extensive cultivation of rice and maize, the former extending in terraces up to lower slopes of the mountains, wherever irrigation is possible from the numerous streams and rivers. As a whole this part of the plateau is marked by bare grass-covered hills alternating with higher peaks with their granite outcrops and craggy summits, while the railway cuttings and the landslides on the slopes of the lower hills show the typical red soil of the country. The journey takes about seven hours.

Antsirabe is the chief town in the province of Vakinankaratra, the district conquered by the Hova before the occupation by the French, and the people are thus a mixture of Betsileo and Hova. The population is now approximately 18,000, of which two-thirds at least are Malagasy, the rest French, Chinese, and Hindus. The town is attractively laid out, well timbered, and lies among the most southerly ramifications of the Ankaratra range. It is chiefly noted for its hot springs. The Government recently built the Hôtel Terminus, to attract the civil servants and others who might use the place for periods of leave. As far as could be gathered it had not altogether been a success financially, though many do spend their local holiday and sick leave there.

The trains to Antsirabe run only four times a week and one has to stay a night there to catch the bus to the south. These buses go twice a week only, and it is often difficult to get a seat. They leave at 5.30 a.m., and when the chill of the morning wears off, one appreciates the comparative excellence of the road and the skill of the native driver. This is the only important metalled road leading to the south of the island, ultimately reaching Fort Dauphin. Another fairly good road is available to the westward from Fianarantsoa *via* Ihosy to Tuléar, the chief town of importance on the west coast with about

15,000 inhabitants. Fort Dauphin, now a town of 30,000 inhabitants, has figured very prominently in the history of Madagascar from the sixteenth century, and, if the harbourage were not insecure for large vessels, would no doubt have played a more important part in the commerce of the country during recent years. As it is, road transport is the only means available for visitors or the local inhabitants, and at least six or seven days are taken to get to Fort Dauphin from Tamatave, provided that train and bus fit in fairly well and that the condition of the roads does not cause a hold-up for a day or two in the wet season. It therefore takes about a fortnight to reach Fort Dauphin from Durban by the quickest route, that is by the Dutch line *via* Mauritius, Réunion, and Tamatave. From these facts it is obvious that travel facilities are still in their infancy for the size of the country and for the time it has been under colonial administration.

The road south from Antsirabe to Fianarantsoa is through mountainous country, but, unlike the country from the coast to Tananarive, it is much more thickly populated and villages are fairly frequent. The largest of these is Ambositra, about half-way to Fianarantsoa, a pretty little place where the motor bus stops for European passengers to have a rather indifferent meal at a small hotel.

Fianarantsoa is reached about 4 p.m. and is one of the largest towns in the island, the population being nearly 15,000. The original town, a mass of red roofs among which the French Catholic Cathedral and several churches are prominent, is picturesquely situated on a hill rising from a valley which opens out towards the south. There are extensive views of the still mountainous countryside with its granite peaks, similar to the kopjes in South Africa, rising out of smooth, grass-topped hills, very sparsely timbered. In the immediate vicinity the town is surrounded by hills which have been well forested by the French and among the trees are many houses dotted about, mostly belonging to the French residents. There is only one small hotel which when I arrived was full and I was straight away taken in charge by Mr. and Mrs. Helland, of the American Lutheran Mission, who most kindly put me up for the four days I was there as a guest in their own house. It was due to their kindness that I was able to see and be told much about Fianarantsoa and the district.

The tribe here is the Betsileo, which borders on the country of the Bara to the south and on the Tanala in the forests to the east. The Bara, who in the old days had a warlike reputation, were never really vanquished by the Hova, and I was told that if French rule were discontinued to-morrow, such is the traditional hatred of this tribe for most of the others, especially the Hova, that tribal troubles would soon start again. Looking out on the very civilized appearance of this up-to-date French colonial town, with its smart motor cars, lorries, shops, and all the facilities for trade and business, it is difficult to appreciate the undercurrent of national feeling which is still so strong in the Malagasy as a people. One appreciates it more when one goes out off the beaten track and sees the ceremonies associated with a funeral, the burials still taking place up on a lonely hillside miles from a village or town. Such burial places are marked by a stone set up vertically, and often hanging round it are the horns of oxen which have been killed at the ceremony. Occasionally

in the more isolated villages one will notice a man in the village street with just a loin-cloth and a spear, looking strangely out of place among the somewhat artistically dressed Malagasy. On the other hand one has only to hear about and look at the records of the various missionary societies to appreciate the fact that the educated Malagasy becomes a most excellent citizen.

The most important change for Fianarantsoa recently is the new railway down to the coast at Manankara, which will open up new possibilities for trade in this part of the country. The country is mostly agricultural, and serious attempts were being made by the government to stimulate the interest of the natives in garden flowers. Both here and at Antsirabe I was taken to see the local experimental market gardens.

I was able to see the workings of two leper colonies while at Fianarantsoa. These are excellently organized. The buildings are all of recent construction and laid out on the hut system with suitable houses for the administration, and it was specially interesting to meet an English nursing sister there from the London Hospital, who was doing most excellent work.

The return journey from Fianarantsoa by motor bus to Antsirabe the first day, and then by rail again to the capital, was luckily made in fine weather. The bus started punctually: this is essential in the rainy season, as the roads are often partly washed away and a hold-up for two days while they are repaired is not uncommon. The drivers and their assistants are all Malagasy who, trained in the country by the French, make very good mechanics as well as good drivers. The buses hold about twenty-four passengers and are very comfortable and well ventilated. Much of the road was at a level of between 5000 and 6000 feet, and starting at 5.30 a.m. one arrived in Antsirabe about four o'clock. Apart from lorries and cars there was little other traffic, and that consisted of carts drawn by four or six oxen; for long stretches the only thing one saw was a bicycle or one or two pedestrians.

On my return to Antsirabe I was taken out by car to get a fine bird's-eye view of the district from the summit of a neighbouring hill. Here one could see all round for a distance of about 40 miles an undulating plain, well watered and cultivated, and showing the attention the colonial administration has paid to afforestation, most of the plantations being eucalyptus trees and beautiful avenues of mimosa. On almost all the horizons were mountains rising to another 1000 feet or so, those to the northward being the continuation of the Ankaratra range.

Tananarive is the seat of the local government as well as the headquarters of the civil and military administration. A Consultative Council of Administration, presided over by the Governor-General, has been established, and functions in the capital. The colony is not represented in the French Parliament, but there is an Economic and Financial Delegation composed of eighty French citizens and twenty-four natives. The former are elected by the chambers of commerce, industry, and agriculture, and the municipal councils. The native members are all chosen by the votes of a body of representatives selected by the chiefs of the villages. This delegation meets once a year for the examination of the budget proposals and questions of general economic

nature. Four Europeans and two native members of the Council of Administration also take part in the meeting of this assembly. For local administration Madagascar is now divided into eight regions and eighty-one districts. Natives are employed to a large extent in subordinate positions both in the civil and military administration. In all parts of the island the natives are allowed to choose chiefs who represent them in their relations with the Government.

Education is compulsory between the ages of six to fourteen, though in the outlying districts there is considerable difficulty in maintaining good attendance. It is entirely secular, all religious instruction being given in the various schools attached to the missions.

The attitude of the Government towards religious instruction appears to be apathetic, though no difficulties are put in the way of the various missions, and it is very interesting to note that of the government officials who have been educated in the Protestant schools, 70 per cent. retain their attachment to their Protestant faith. They are looked upon by their superiors in the government service as being more dependable and efficient, and are retained in their positions in spite of the fact that many of them or their wives and families attend the English Protestant church and even teach in their Sunday schools; as long as their religious duties do not interfere with their government work, no objection is taken by those in authority. The tendency among the Malagasy as they rise in the educative sphere is to obtain some position of authority which is relatively well paid and which is often associated with the wearing of a uniform of which they are inordinately proud; the teachers in the government schools all wear uniform. The Christian population in 1895 was estimated to be: Protestant 450,000, Roman Catholic 150,000. Many of those who are educated in the Protestant Mission (London Missionary Society) prefer to remain with their own schools as teachers although they thereby have to sacrifice considerably larger salaries which the government hold out as an inducement, as well as such social advantages as government service with its distinctive uniform provides.

Opportunities of observing the technical training and ability of the native both in hand and brain were given me when I went round the printing works of the publishing house over which Mr. Conolly had sole charge. Typesetting, printing machines, and all the technicalities of the production and binding of books, papers, and periodicals for missionary work were in the hands of the Malagasy, both overseers and workmen. I was shown a large edition just completed of a Bible Dictionary in the Malagasy language which it has taken the authors, the Rev. W. Evans and Mr. H. Handzevola, ten years to bring out.

One of the most striking sights in Tananarive is the Analakely market, of its kind almost unique. Situated in the centre of the city it spreads over a large triangular paved space, on two sides of which tower the two hills on which most of the city is built. At the base of the triangle a broad road leads down to the station and gives a view of the distant mountains to the westward. Access to this market-place on one side is by a long flight of broad steps leading up to the modern centre of the city, its gardens, hotels, banks and shops, while on the opposite side another long stairway leads up the

opposite hill to the district called Faravohitra, where many of the private residences are. The market is partly the usual collection of stalls with the wares laid out on the ground or on trestle tables, and nearly every stall has a large white umbrella over it; the rest of the market is carried on in buildings of brick, their steeply angled roofs tiled with the typical red tile. On a brilliantly hot morning the mass of white-robed figures mingled with the vivid colours of the fruit and the green of the foliage and the white umbrellas, seen from the top of one of the stairways, is a remarkable sight. The chief commodities for sale on the stalls of the open market were vegetables, fruit, basket work, mats, hats and caps, and pottery. Clothing materials, hardware, and many modern articles of clothing were mostly in the brick buildings alongside the open market, because of the possibility of sudden rainstorms. It was here that one saw the many varieties of *lamba*, from the plain white plaid-like shawl to the brilliant coloured variety embroidered with artistic designs, used for important occasions. One thing of particular interest was paper, often in the form of notepaper and envelopes, which has been made from the bark of the *hawha* tree since the sixteenth century.

As very heavy rain had fallen on most days since I had arrived in the country, arrangements had to be made some days in advance for carriers and the *filanzana* to meet me if I was to carry out my plan of visiting lake Alaotra. This journey to the north, the Antsihanaka district, is made by taking the daily train from Tananarive to Tamatave as far as Moramanga, where the branch line takes one to Andreba, approximately 100 miles farther north.

I left Tananarive at 6.30 in the morning, and as the mornings were generally fine and sunny, I was able to take in that part of the railway journey which on the way up had been mostly passed in the dark. For the first two hours and a half one is still on the high plateau where rice and maize is much cultivated, and there are occasional villages. Later one enters the mountains and the descent into the Moramanga plain commences. This is one of the finest pieces of mountain scenery on the whole line. The railway enters the rim of a huge basin in which the town of Moramanga lies, and winds with many hairpin bends down to the level of the plain; during the descent there are beautiful views of the valley below. Moramanga lies at 3000 feet on a vast level plain stretching to the north, bordered on the east by a large belt of forest, and to the west by the escarpment of the central plateau. It is a centre for agriculture, graphite, manioc, and forestry, and for that reason has become the junction of the two most important railways in the island.

Leaving the junction about noon, the train went due north practically in a straight line for about 40 miles and on the same level, stopping at various small stations where the arrival of the weekly train was one of the excitements of the local population. The country here is flat and given up to the cultivation of rice, with many plantations of eucalyptus. Farther north the line entered a valley between low rounded grass-covered hills, accompanied by a river which ultimately entered lake Alaotra. Erosion was very noticeable here, in the form of great scarlet-crimson gashes on the slopes of the vividly green hillsides, the green being if possible accentuated in the valleys and along the

railway line by the rice-fields; a brilliant blue sky above made a picture of extraordinary contrasts in colour.

In spite of the very slight difference in gradient on this line, it was ten o'clock at night before we arrived at the rail-head, though this was partly due to a wash-away of part of the embankment owing to the heavy rainfall the day before. A breakdown gang was already at work, as such occurrences are fairly frequent during the rainy season. It meant walking along the line and over a temporary wooden bridge, carrying one's baggage to another train which was apparently kept at rail-head for purposes of rescue on this section of the line. It is usually in the afternoon or evening that the rain begins again, and by the time that we had arrived at Andreba it was pitch dark and pouring with rain.

Andreba, which is only a small village, lies in swampy country at the south end of lake Alaotra, which is 25 miles in length and about 5 miles broad in parts. The country on the east side is undulating, with bare rounded hills stretching away to the border of the big forest belt which in this part of the island reaches nearly to the coast. On the west, for the whole of its length, and extending 8–10 miles to the south-west of lake Alaotra, is a vast swamp, across which devious native paths find their way to a few scattered villages situated on the more rising ground among the foothills of the central plateau. The lake is nowhere very deep and teems with crocodiles and fish of many kinds. Water fowl are present everywhere in great numbers, including duck, geese, crane, stork and heron.

Though the station buildings at Andreba were of ordinary modern design and built of brick and tin, the small village was of scattered wooden (split-bamboo) houses with palm thatch, and the small hotel is a collection of the same: one hut for meals and kitchen, another for the manager and his wife, and two or three others for guests on the rondavel system.

The so-called road from Andreba to Imerimandroso, a village near the northern end of the lake, which was my destination, was in such a condition owing to the recent rains that the only form of transport was by *filanzana*. This is the method of transport which has been prevalent in Madagascar, as in other parts of the world, for centuries; until comparatively recent times it was the only means, apart from walking, of getting about the country by those who could afford to pay carriers. In the times of the slave trade thousands of natives were employed for this purpose alone, and the cruelty practised by Ranavalo I on her journeys about the country resulted in hundreds of her carriers being literally driven to death. A light arm-chair slung on two horizontal poles with a foot-rest suspended by two straps is the simple method now employed. The four carriers, one at each end of the poles, change places every three or four minutes with another four during the whole of a journey, a team of eight being the usual number; an additional man carries the baggage slung on a bamboo pole across his shoulders. Starting from Andreba at 5.30 a.m. we covered the distance of approximately 16 miles in less than four and a half hours, which considering the appalling state of the so-called road for the first 7 or 8 miles, a succession of slimy mud-holes sometimes up to the knees of the carriers, was a remarkable performance. In such conditions it was certainly the only way of travel-

Fianarantsoa C. R. P.

South coast of Madagascar, near Fort Dauphin C. R. P.

Imerimandroso from lake Alaotra C. R. P.

Village on lake Alaotra C. R. P.

ling. I noticed that the average time for a change of carrier was about three and a half minutes, though once or twice one of the better developed and more experienced men took on for seven minutes. The change-over is effected without a halt and with little appreciable jolt or movement.

The attitude of the carriers during the whole journey seemed to be one of constant amusement, jokes being bandied from one to the other with occasional shouts of pure *joie de vivre* as they passed through one of the scattered villages *en route*. They even seemed surprised that I wished, when the road permitted it, to walk for a couple of miles. When we came to the long hill up to the village of Imerimandroso, and I indicated that I would walk up it, those of them who were not carrying the empty chair ran full tilt to a stream halfway up the hill to wash their legs and feet, which were caked with mud, and when nearing the village, hurried to catch me up and proudly insisted on my getting into the chair so that I should arrive in state.

The road to Imerimandroso from Andreba runs through undulating country along the eastern border of lake Alaotra, of which one gets occasional glimpses; there was plenty of bird life on the marshy land and among the reeds along its edge. With the exception of two villages the country is sparsely populated; occasionally there are patches of maize or rice and a few native wooden houses round which pigs, geese, and ducks abound, while small plantations of eucalyptus trees in the hollows and near the villages vary the somewhat monotonous rounded grass-covered hills through which the road winds. Imerimandroso itself lies on the top of a ridge of hill looking down on the lake at its northern end, and once one emerges from the splendid avenue of gum trees which border the road, there is a fine view of the lake and the surrounding country. A great number of the houses in the long village street are built of brick and tile, which with the almost magenta-coloured soil of the road and the fresh green grass and the gum trees, makes a most attractive picture against the distant blue of the mountains and the sky.

I was met at the mission by my host and hostess, Mr. and Mrs. Williams, whose guest I was for the next ten days and through whose kindness I was able to see much of the village life in this outlying district. The only other Europeans living in the village were one Scotch lady, Miss Lochead, in charge of the small hospital attached to the mission, the French commandant and medical officer in charge of the civil administration, and the French priests in charge of the Catholic mission. The mission house is a comfortable two-storied brick-and-tile building with balcony and verandah, set in a delightful garden in which many English flowers, including roses, carnations, antirrhinums, and honeysuckle, were in full bloom.

The house and garden gave very extensive views to the westward across the lake and the flat marshy country beyond it to the distant range of mountains forming the escarpment of the central plateau. To the eastward the country rose in rounded grass-covered hills to the edge of the great forest belt which here stretches almost to the coast. The river Maningory, by which the lake empties itself, flows at first north and then east to enter this forest belt, and falls through deep gorges down to the coast north of Tamatave.

It is only in August, September, and October that it is possible to make a tour of the forest district, which Mr. Williams has to do each year. The

difficulties even during these months are considerable. The touring is done only by *filanzana*; the tracks are at times blocked by fallen trees, landslides, and overgrown bush, while the distances between the small and very primitive villages are considerable. Accommodation is almost non-existent, and the attitude of the natives in this north-eastern area often far from friendly. The difference between the comparatively civilized atmosphere of the village of Imerimandroso and that of country some 10 miles or so in the forest belt is very striking.

Unfortunately, owing to the wet season and the short time at my disposal, I was unable to experience these conditions myself. During visits to the small but well-attended market in the village one noticed the different types of Sianaka, the local tribe; they are part of the Betsimisaraka, which inhabit a large area of the east of Madagascar between the coast belt and the eastern border of the central plateau.

Some of them were highly intelligent, especially those educated in the mission; while some one met in the market who had probably come in from the outlying country were of a distinctly lower type, both in their physiognomy and manners. Several of the workers in the tutorial part of the mission were of an exceptionally high standard among the Sianaka. I mention this because of my earlier impression that the Hova were almost the only tribe who had attained such high standards of intellectual efficiency; it was noticeable that where we met the higher intellectual individuals they were of the Malayan, and not the Negroid, type.

It was here towards the end of my stay that I was able to spend a morning on the lake to see the bird life. I was taken out in a dug-out canoe, about 30 feet in length, from a small village nearby where most of the inhabitants were fishermen. I was able to see a good deal, as my three paddlers soon understood that I wanted to take photographs and that it was necessary to get as near as possible to the larger cranes before they took flight. By turning down wind we sometimes got as near as 60 feet. The lake was said to teem with crocodiles, but I saw none; the district also teemed with stories about them more fantastic than any to be heard in any fishing camp: the Malagasy, especially in the country districts, being extraordinarily superstitious.

The weather for about five days of my stay was cool, windy, and overcast, but with most striking and beautiful sunsets. This was apparently typical of what was termed locally "cyclone weather"; this was confirmed by a weather report later that a cyclone had visited two towns in the south-west, but that the damage was not great.

My second visit to Tamatave confirmed the impression of the conditions under which the native population live in that humid and relaxing climate, which accounts for the lack of any inclination or ambition to better their local living status. The housing accommodation was certainly deplorable and the problem evidently difficult to deal with; but how far the civil authorities had made the attempt I was unable to ascertain; there was certainly no evidence of any modernization in the buildings of the poorer class native. I was able to hear something about the education of children and the effect it had on the environment of the home and the ultimate upbringing of the family, and I

obtained the impression that from the point of view of mental initiative and general morale it was disappointing.

It was not until the last afternoon at Tamatave that I had a chance of seeing the lemur cat, and then only as a household pet. The method of capturing these animals, which live nearly always in the tops of the big forest trees, must be fascinating to watch. The natives collect round the base of the trees where they hear them chattering and shrieking, and by shouting and knocking on the trunks chase them to a nearby clearing where they try and isolate one on a tree apart. They then cut down the tree and fall upon the lemur with sacking or a net. Lemurs are difficult to see in the forest, as they are very shy and are rarely seen on the ground, and the task of capturing them needs considerable skill even on the part of those natives who live all their lives in the forest belts.

It was with great regret that I left Madagascar. I felt that I had only touched on the fringe of an immense variety of interests in a country which until comparatively recent times had kept so many of its secrets from the civilized world. A visit of several months, say from April to October, would be necessary to explore the country as a whole, as communications are still slow and very limited. Much would have to be done with camping outfit and by *filanzana*, for which carriers would mostly have to be engaged through government channels. There is no doubt that the reward would be ample for the botanist, zoologist, or geologist, as for the student of folk-lore.

DISCUSSION

Before the paper the PRESIDENT (Field-Marshal Sir PHILIP CHETWODE) said: Dr. Porter is one of our Fellows who retired some years ago and devoted himself to travel and water-colour painting. His journeys took him recently to Madagascar, and his purpose now is to give us, in words and on the screen, a picture of Madagascar as he saw it in the early months of this year. We find it useful from time to time to put on record the impression a good observer forms of a present stage in the development of a country. It is especially interesting in this case because of the French civilization grafted upon an older indigenous culture.

Dr. Porter then read the paper printed above.

The PRESIDENT: I am sure you all wish to thank the lecturer very much indeed for the most interesting lecture he has given us. Personally I confess that I experienced a deep sense of disappointment when he omitted the gruesome details of the punishments meted out by the queen: when I saw the picture of that lady I thought we should hear something interesting about her. I ask you now to accord a hearty vote of thanks to Dr. Porter.

TWO UNEXPLORED ISLANDS OFF DUTCH NEW GUINEA: WAIGEU AND JAPEN

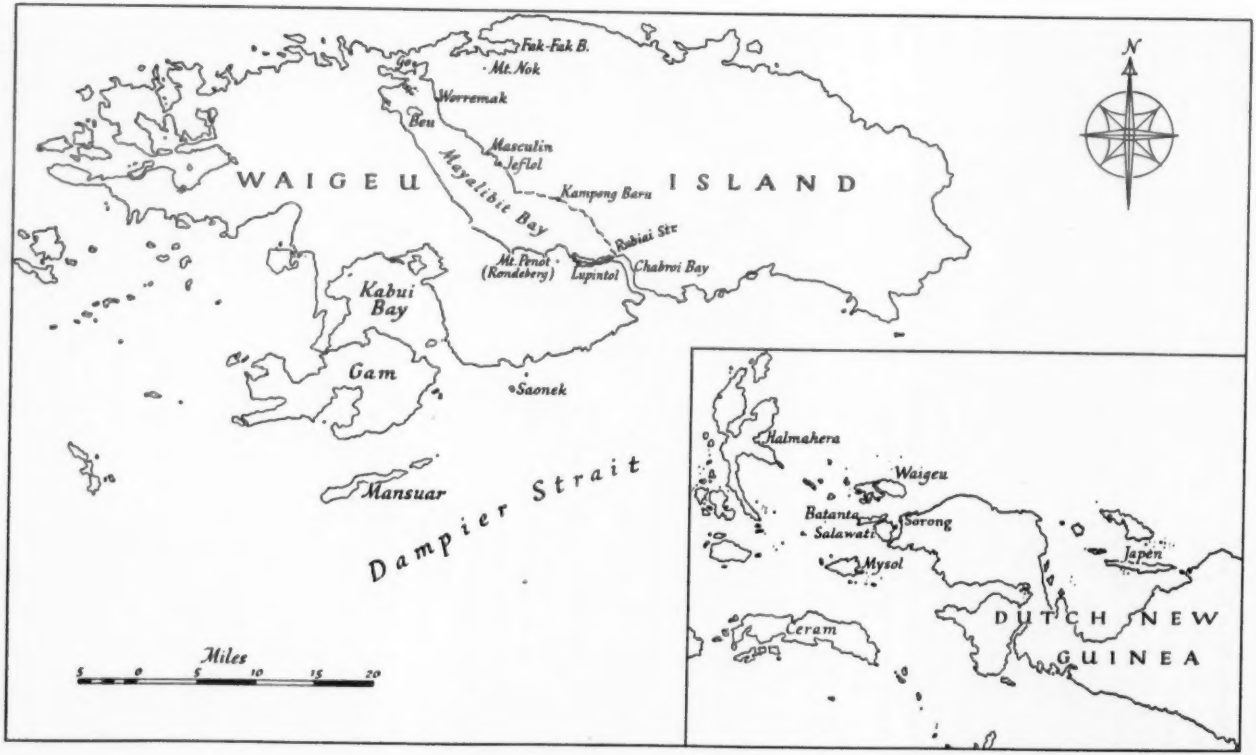
L. E. CHEESMAN

MY recent collecting expedition in New Guinea lasted from February 1938 to June 1939, a year of which was spent on two islands off the Dutch territory to collect insects, mammals, ferns, etc., for the British Museum (Natural History). Afterwards I crossed the boundary into the Mandated Territory, and collected insects only in the Torricelli mountains and the foothills of the Bewani mountains on behalf of the South Australian Museum at Adelaide. Grants in aid of the first part of the work were allotted to me by the Trustees of the British Museum and the Godman Salvin Fund; for the second part by the Trustees of the South Australian Museum. I should like to take this opportunity of expressing my thanks for this assistance. My gratitude is also due to the Netherlands Government for permission to carry out the work in Dutch territory, and for all facilities accorded to me.

The position of the two old islands, Waigeu and Japen, on the north coast of Dutch New Guinea, suggests at once to anybody familiar with that part of the world that they are worth investigation. Very little collecting has been carried out on either island, and no collectors have been far inland. Both are unexplored. In addition they possess special interest because they may be part of a very old land system which appears to have existed long before New Guinea emerged from the ocean bed during the Miocene–Pliocene. The main object of my visit was to continue a research into the migration of species from Asia to New Guinea, in which this old land played an important rôle. It is in order to throw light on the distribution of species in the faunistic subregion of Papuasia that I have carried out various collecting expeditions in the west Pacific and New Guinea during the last thirteen years: biological data may be trusted to fill many gaps in our knowledge where geological evidence is lacking.

The early geological history of New Guinea appears at first sight to be a very simple story. The island re-emerged during the Tertiary from an ancient, drowned landmass named Palaeonotis, postulated by palaeogeologists (Ostmann, Lapparent, Arldt, and others) as having extended from Asia as far as New Caledonia, and westward to Sumatra and Java, during the Middle Cretaceous. Some time during the Early Eocene (according to the same authorities) part of this land broke away from the Australian shelf and later was submerged. The Tertiary island of New Guinea remained separated possibly until the Late Pliocene, when, the Torres straits being dry, it was united with Queensland for a comparatively short period. It would be expected that land raised from the sea in a geologically recent period, its only continental connection being with Australia, would possess a fauna and flora basically Australian, which would presumably be discontinuous. On the contrary, the Papuan flora and fauna are basically Asiatic, though with a definite Australian element, and with a Malaysian element also. They are moreover continuous, there being no serious gaps in their totality.

It is when we examine biological evidence that we become aware that several chapters of the island's history have been omitted. Reference to those

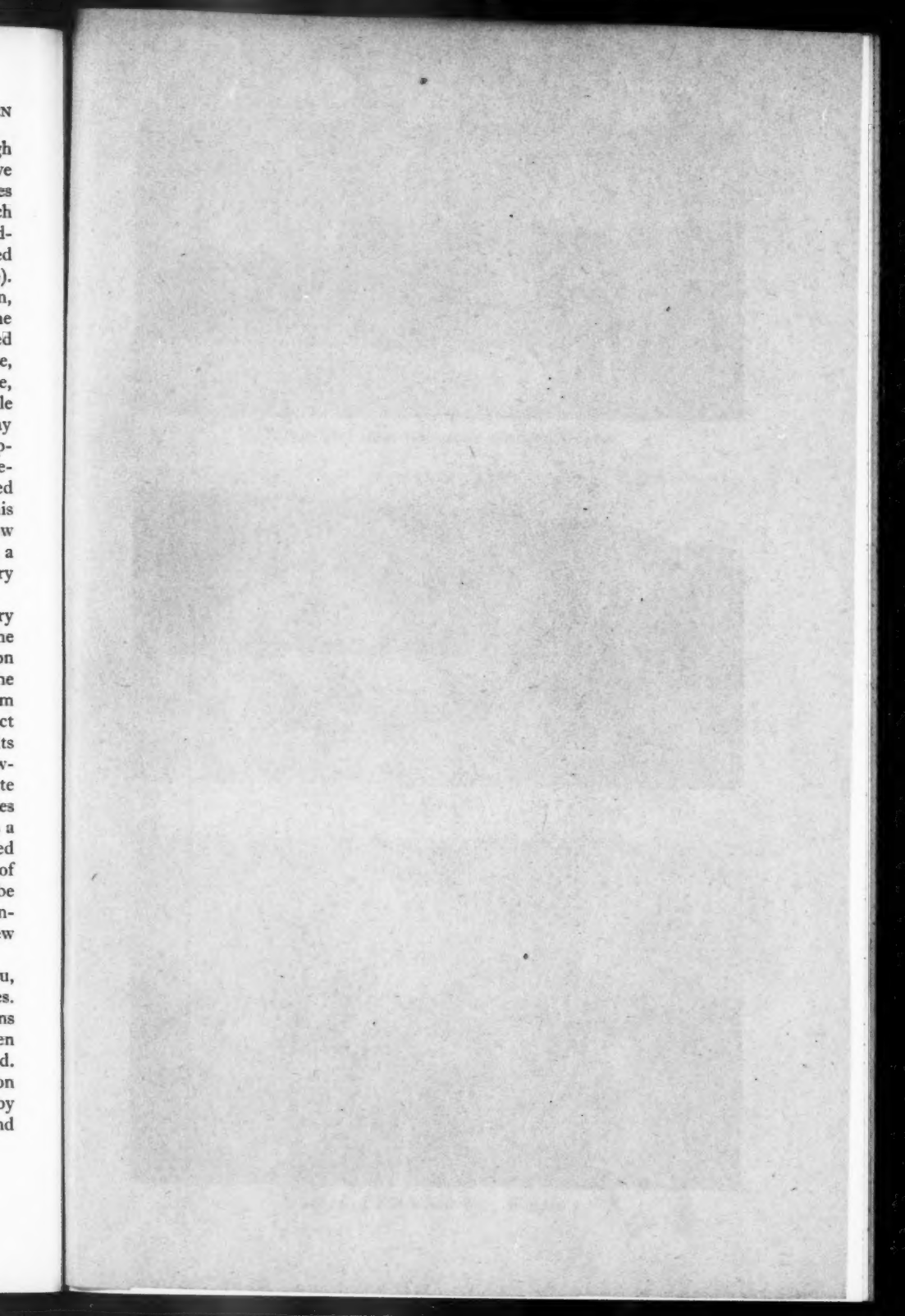

Fak-Fak B.
Mt. Nok
Worremak
Beu
Masculin
Jeflol
WAIGEU
ISLAND
Mayalibit Bay
Kampong Baru
Rubiai Str.
Mt. Penat
(Rondeberg)
Lupintol
Chabroi Bay
Kabui
Bay
Gam
Saonek
Mansuar
Dampier Strait
Miles
5 0 5 10 15 20
N
Halmahera
Waigeu
Batanta
Salawati
Sorong
Mysol
Japen
Ceram
DUTCH NEW
GUINEA

chapters must be looked for in the north of New Guinea. North of the high main ranges of Tertiary rock is an entirely different formation, extensive swamps which were once sea, and on the coast remnants of mountain ranges of extreme antiquity. The western part of this sea is Meevlaakte in Dutch territory, the eastern part is the Sepik basin in Mandated Territory. According to the reports of British and Dutch geologists, these two areas were united by a shallow sea dotted with islands (Zwierzychi 1921, and Mason-Jones 1930).

With regard to the ancient mountains it is considered that New Britain, the Finnisterre and Torricelli mountains, Mount Bougainville, and the Cyclops mountains belong to the same formation; F. R. Stanley has suggested (Report on New Guinea, 1923) that they are "distinct from the Main Range, which is younger and a geanticline possessing an Indo-Malaysian structure, while the coastal ranges are a geanticline of smaller dimensions with a probable Asiatic structure." This hypothesis is supported biologically; and there may have been land bridges through Japen, Waigeu, Halmahera, and the Philippines to Asia. Supposing therefore that this ancient landmass now represented by wrecked mountain ranges was populated from Asia, and remained above water long enough to colonize the young land of New Guinea, this would result in a fauna and flora of just that character which we find in New Guinea to-day, namely, very rich in forms, without antique types, but with a strong neo-endemism. It is indeed difficult to find a more satisfactory explanation.

Scientific material which I have collected in this sub-region has proved very interesting. I have now made collections in the mountains of Papua, the Torricelli mountains, Mount Bougainville, the Cyclops mountains, and on the islands of Japen and Waigeu. It is scarcely necessary to point out that the antiquity of insects as a class, as well as their abundance of forms, gives them distinct value as the basis of theories on zoo-geography. Parts of my insect collections are in process of being worked out. It will be years before results can be coordinated, but they may provide a definite contribution to our knowledge of the zoo-geography of Papuasia. It is sufficient for the present to note that the nearest relatives of Papuan forms are usually found in the Philippines and Asia. In cases where relationships exist with Australian forms, then as a general rule it is with those of tropical Queensland which was formerly joined to New Guinea, and not of the rest of the continent except in the case of widely distributed species. A great deal more taxonomic work remains to be done and more collecting is needed. But facts available certainly do not contradict the assumption of former land bridges connecting northern New Guinea with Asia, and there is much evidence in favour of it.

Ancient crystalline rocks have been recorded from both Japen and Waigeu, but the islands appear to be built up mainly of elevated reef limestone ranges. Volcanic rock had not previously been recorded, but there are specimens from both islands among my material. The possibility that there have been disturbances from volcanic movements does not seem to have been considered. Von Rosenberg even wrote that there is no trace of volcanic activity on Waigeu; yet Mount Nok (Buffelhorn), north of the island, mentioned by several early travellers including himself, proves to be of volcanic rock, and there is a considerable amount of igneous rock in Fak-Fak (Offak) bay.



Japen: reef limestone range seen from Serui

Serui

Head of Mayalibit bay, Waigeu

The head of Mayalibit bay, from Mount Nok

Mount Nok

The head of Mayalibit bay, from Mount Nok

Mount Nok

Waigeu

Waigeu is about 85 miles long and 28 miles wide. The name has been spelt in many ways. In the language of the island *wai* means "water," and *geu* is "inside," referring to Mayalibit bay which almost cuts the island in two.

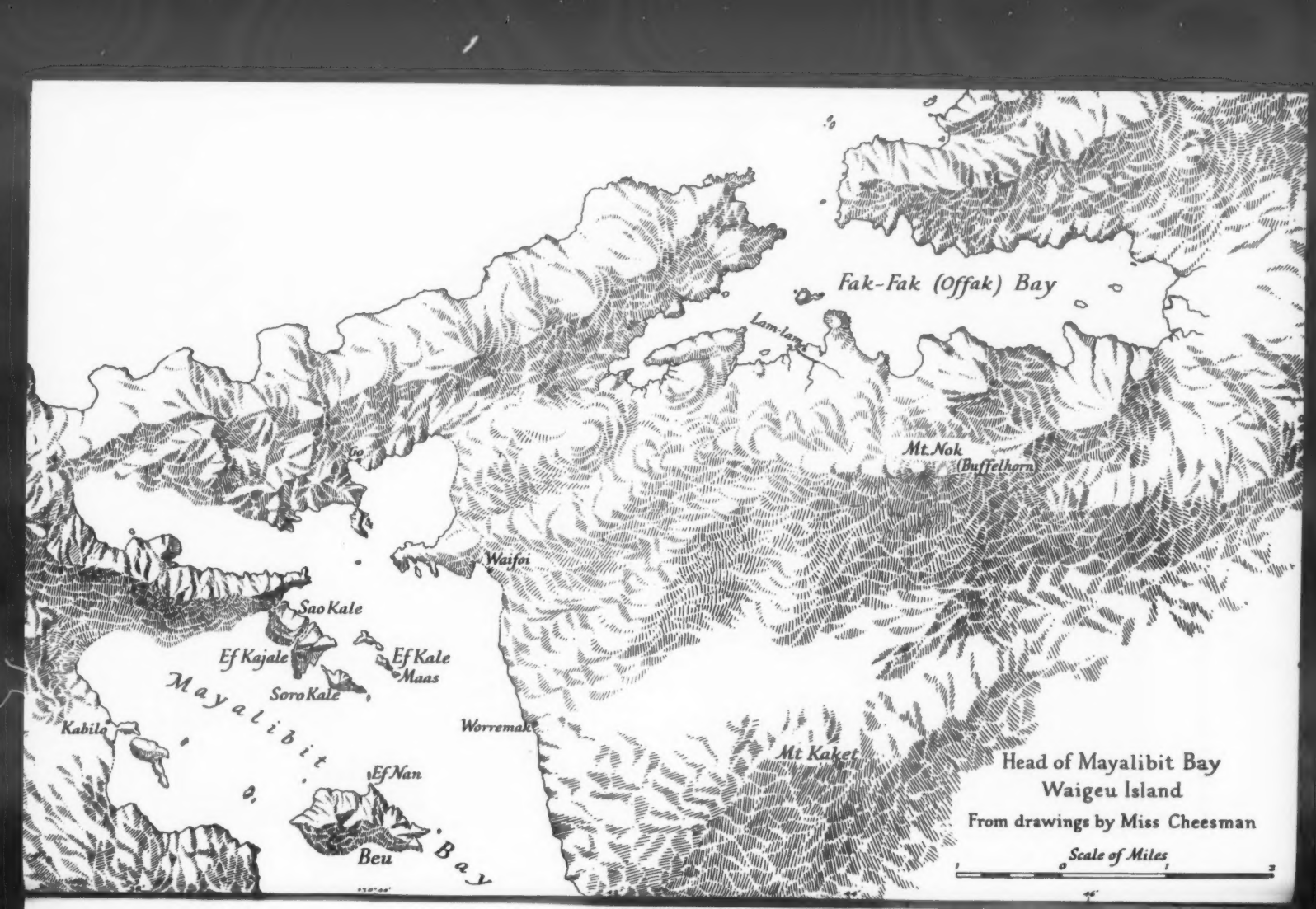
It was discovered by Dampier, visited by many early travellers, but never explored. Bougainville sighted it; Captain Thomas Forrest, Freycinet, Dumont d'Urville, and others visited islands on the north.

Wallace spent two and a half months on the southern coast, after an extraordinarily adventurous time in a prau, the victim of strong currents and adverse winds. Starting from Ceram he landed on Waigeu instead of Mysol, where his assistant, Mr. Allen, was waiting to receive him and some much-needed stores. A couple of *kulis*, part of his crew, were left stranded on an uninhabited islet on the way, and Wallace had tried to make no fewer than six islands in succession, and missed them all. His visit coincided with that of von Rosenberg. Both were collecting birds, but they did not meet. Rosenberg mentions that he received an invitation from Wallace to come over and visit him, but was down with fever at the time; Wallace makes no mention of the incident. Wallace found crystalline schists on the mainland. Some specimens that I brought back came from the same mountain range on the farther side. Von Rosenberg stayed with a rajah at the entrance to the Rubrai straits in Mayalibit bay, and bought bird skins from the natives. The supposed ferocity of the bush tribes at that period would prevent his carrying out any exploration. The usual attitude towards primitive peoples in early days is clearly shown in the unpublished journal of a Kew gardener, George Barclay (MS. in the Botanical Department, B.M.), who went out in the *Sulphur* which visited Waigeu in 1833. According to Barclay, Waigeu natives were fired on whenever they were sighted, but in spite of these conciliatory measures the savages remained hostile. Barclay's botanical collection indicates that he never went far from the shores.

There is no white Dutch Government official living on Waigeu now, but a Netherland Indies *bestuur* (native magistrate) lives on the island of Saonek, which is the port of call for the local, monthly steamer from Makassar. The *bestuur*, who is a descendant of the last rajah of Waigeu, is under the Assistant Resident at Sorong. Waigeu was formerly owned by the Sultan of Tidore and is often referred to as part of the Pulau Ampat (four islands) rajahdom —Waigeu, Bantata, Mysol, and Salwati.

I hired a room in the *bestuur's* house at Saonek and made that my base camp. There are only two white men on the island, German colonists, who were consistently kind to me. Both had land concessions on western islands. Herr Vehring's trading schooner, built by himself, was the only vessel besides native praus to visit the coast, and I am indebted to him for the opportunity of seeing the whole western part of the island, the scenery of which is very beautiful.

From a collector's standpoint both islands are extremely difficult to work. The coral limestone mountains make any cross-country journey a great undertaking. They must be crossed because it is essential to form mountain camps inland: coastal collecting on such islands would leave most of the work undone. I decided to get a good view of the country first from Mayalibit bay, then try to encamp on Mount Nok.


Fak-Fak (Offak) Bay
Lam-lam
Mt. Nok
(Buffelhorn)
Waifoi
Sao Kale
Ef Kajale
Ef Kale
Maas
Soro Kale
Mayalibit
Kabila
Worremak
Mt Kaket
Ef Nan
Beu
Bay
Head of Mayalibit Bay
Waigeu Island
From drawings by Miss Cheesman
Scale of Miles
0
1
2

Living coral exists the whole 21-mile length of Mayalibit bay; changes of tides are felt even at the head of the bay, where, near the village of Go, spring tides cause a rise of water of about 8 feet. It takes two days from Saonek to Go in a prau, paddling and sailing by turn. Inside the bay the scenery is magnificent. The mouth widens into Chabroi bay; according to von Rosenberg this name was given by the rajah with whom he stayed. The main water is reached through narrows north-west of Chabroi bay; they are half a mile long, and are called the Rubiai straits. Here one passes through white limestone cliffs like folds of a screen, rising to about 100 feet in places and sheer to the water. The bed is very shallow, and the large volume of water being forced through the passage results in such strong currents that praus cannot pass through in low water but must wait for the tide to turn. Even then progress is slow, as the prau zigzags from bank to bank to avoid currents and grinding off heads of coral; the *kulis* must wade frequently to lift it bodily off the coral when it sticks fast.

Suddenly the view widens as the last fold of the screen is passed and the farther shore appears 5 miles away.[1] To east and west series of rather low ranges cross the island with roughly the same trend as Mayalibit bay, namely, north-west to south-east. They show two very distinct types of formation, either with smooth contours and table-shaped mountains, or else in marked contrast the ridge has very deep transverse erosions, cutting it out in series of rounded peaks which from a distance look almost uniform. Ranges of this latter type seem to be built up entirely of elevated reefs. Vegetation is rich and well repays the prodigious difficulties of collecting. There is no level ground, but rather loose coral boulders, and between the peaks are such deep cracks that frequently a long detour must be made to avoid them.

The wealth of vegetation along the shores is surprising, and one is struck by its curious diversity of character. On the one hand mangrove and sago swamps, stretching far inland with their swamp ferns and palms, and slow, green rivers. On the grey mud crocodiles are to be seen, and large snakes coiled in knots up in the trees; and green speckled giant lizards nosing among mangrove roots. From this scene you pass to a stretch of forest which appears to have been transported intact from 100 feet above, either through a landslide or subsidence. Trees are dying, their trunks plunged into salt water, while their upper boughs continue weighed down with mosses, orchids, ferns, parasites, and ephiphytes belonging to the rain forest. Most curious is to hear the cheerful *tum-tum* of subterranean drummer frogs almost at the brink of the water. I have only taken these frogs at higher altitudes. Fifty yards farther comes coral again, the broken reefs strewn with boulders; characteristic madreporic vegetation flourishes with horizontal trunks of *Callophyllum* thrusting their great crowns forward towards the water.

Half-way up Mayalibit bay Mount Nok and Little Nok, like a double fang, appear above the ranges. It is not the highest mountain on the island, but its peculiar form makes it a landmark from a long distance away. It was noted by most of the early navigators who passed along the northern coast. Captain Forrest first called it the Buffalo-horn and the Dutch adopted the name. Natives do not recognize it; to them it has always been Mount Nok. It is

[1] According to von Rosenberg's estimate.

strange that it has not previously been climbed. The Netherlands Government have of late years made aerial surveys of the greater part of their huge territory of New Guinea, and good maps exist of all but the central mountain masses. But Waigeu remains a blank. Some aerial photographs have been taken, but so far there is no map. When the Dutch cartographers set about this work I trust that the new map of Waigeu will bear the name "Mayalibit gulf" instead of "Mayalibit bay."

The fact that Mount Nok is volcanic may have significance in the evolution of Waigeu's fauna and flora. It is possible that the island may have been partially destroyed by volcanic action.

My first project was to get a clearing cut on the western spur of Mount Nok. Three villages had to contribute *kulis* for this undertaking. There are no large villages on Waigeu, those of Mayalibit bay being mere hamlets. The natives are Papuans, akin to the sea tribes which inhabit the mainland coast. Bush tribes formerly lived in the mountains, but there was continual warfare and they have all died out. Four different languages or dialects are spoken to-day: *Bessir*, which is spoken in about fourteen villages; *Amber*, also in fourteen villages; *Kawei*, in four villages; and *Langanyan*, in the three Islam villages of Lupintol, Jeflol, and Beol. The three first are Papuan languages, the fourth may be a Tidorian dialect. Malay is the *lingua franca*, as over all Dutch New Guinea, but comparatively few of the natives on Waigeu understand it well.

There was little difficulty in forming a camp directly I had chosen the site; the position proved very favourable for collecting. But trouble began when I wanted to build a hut higher up the ridge at the base of the rock, because of native superstition concerning mythical giant snakes which are supposed to inhabit the mountains of Waigeu. At first I did not grasp the fact that it was not real snakes that the people were so terrified of. I found out by chance from a boy belonging to a distant village.

As my forest clearing was being made it was the custom for Papuans to bring small boys to my camp in order to teach them geography. This is a very important part of a Papuan's education: children have to repeat names of mountains and streams, to know where trails exist, and memorize landmarks. While one father was doing this I overheard some illuminating remarks about snakes which guarded certain mountains. Guessing that this might be the cause of the *kulis'* unwillingness to climb the big rock, I suggested to this boy that snakes on his own mountain were not so big as the one on Mount Nok. He told me instantly that this was quite correct, the snake of Mount Nok was of colossal size and had six legs. A large cavity on the top was its den and a landslide near my camp had been caused by its putting out its head suddenly. Armed with this knowledge I chose a moment when all my *kulis* were present with their chiefs and my camp boys, to make a public announcement that I had a special personal immunity against all types of bush ghosts, and particularly against six-legged snakes. I was able to quote proofs from experiences in the New Hebrides as well as New Guinea. I mentioned that this immunity was shared by anybody working for me. This declaration settled many doubts, and the hut was ultimately built on a small peak directly under the massif.

Camp on the western spur of Mount Nok

Waigeu women drying pandanus for mat weaving

In the Rubiai straits, looking west from Lupintol

Reef limestone range looking east from Lupintol

The mountain is just under 4000 feet high. It is difficult to climb because of vertical sections of bare rock. It can only be approached from the western side, which is forested except for bare precipices at the base. The first of these, which is about 80 feet, must be negotiated by hauling oneself up roots that hang down from a strip of forest overhead. This feat demands no little agility and much faith. The climb could never be attempted if weather was unpromising: heavy rainstorms are a real danger when on those slippery rocks. We climbed to the top four times, and I made a fairly complete survey of the ferns and mosses, besides taking many insects new to my collection.

One climb was made across the north-west face to explore the gully between Nok and Little Nok, in case there should be another route to the top, but none exists. There is a scree nearly all the way, making the climb possible, but at the top the chasm is about 10 yards wide with deep precipices on each side. I started across the north-west face with three boys at eight o'clock in the morning, and did not return until late in the afternoon. For most of that time we were on all fours until the scree was reached. There are only extremely narrow pieces of rock to cling to in places; an added difficulty is that the joint planes dip strongly eastwards. This shows very clearly in certain lights when the joint planes are brought out by shadows cast by the forest and by projecting rocks on the precipices. Above my first camp were beds of slate on the crest of the spur, which had been tilted to a vertical position.

For insect collecting both camps were ideal. A sharp ridge is usually favourable for night work with the moth screen and lamps. On some nights the screens on Mount Nok were covered with insects from dusk till dawn.

After working the mountain a profitable month was spent at Go, in order to reach the dry sandstone hills at the head of the bay. I also collected at Lam-lam in Fak-Fak bay on the north coast. This is an excellent little natural harbour where the *Emden* spent a couple of months during the Great War. A spur from Little Nok runs down into Fak-Fak bay. I took igneous rock where it forms a bluff at the coast, and the same type of rock with shelly-shale on an islet in the bay.

Japen

This island is about 90 miles long, of an attenuated diamond form, the widest part 14 miles across. Only 10 miles separate the eastern end from the mainland. It has been described by Dutch geologists as consisting of a central range of crystalline schist with granite, and two narrow coastal zones of Neoque formation (Miocene–Pliocene). It is represented thus on a new relief map in the Handlung Museum at Batavia, and on a wall-map in the Geological Museum at Kensington. This is misleading. The central region consists of a multitude of broken, irregular limestone ranges, the greater part of them elevated coral. The highest range is 4000 feet, and is reef limestone to the summit. Old crystalline rock and igneous rock occurs in river-beds, chiefly at sea-level; I found no granite.

When seen from the south at a distance of about 40 miles, Japen appears to be three islands, as three distinct mountain complexes rise out of the sea. The central complex is highest, and the western lowest. I worked for six

months in the central mountains north of the little port of Serui, making three camps at different altitudes.

The birds of Japen are well known. Georg Stein was the most recent collector there. He spent nearly a month on the island in 1931, but did not penetrate beyond the coastal mountains. Other zoological groups have been neglected. No systematic collecting of insects has ever been carried out, and there was a great deal of work to be done.

On approaching Serui from the sea, a range 1000 feet high rises conspicuously like a thin, high wall. This is the Aiam range, of the type of limestone occurring on Waigeu already referred to, characterized by the transverse erosions of the crest. From the village of Montembu, 4 miles north of Serui, I climbed to the top and made camp on one of the peaks, Mount Baduri. The climb is strenuous, as these ranges all seem to be formed of large, rugged coral boulders with a thin superstrata of soil. Travelling is perforce slow over sharp-edged coral rock; the interstices are full of leeches and this necessitates frequent pauses. Near the top, vegetation changes, and one is deep in moss, ferns, shrubs, and small trees. There are few lofty trees except on the crests. Conspicuous among these are the *Araucaria beccari* Warb., which attain an enormous size, standing far above the rest of the forest.

Camping on Baduri, where the collecting was so interesting, was fortunately possible, although it was rather a problem to build huts where there was no level ground, only hummocks and hollows. My hut was on high piles rammed into the rocks at any angle. The *kulis* preferred to roof over a large cavity, and squatted or slept on trunks which formed the floor. Camp trails were partly along felled trunks which bridged the dips. Several of the groups of trees which I ordered to be cut down had to be left standing because it was impossible to get near them on the precipices. As all trees were hung with dense curtains of moss and epiphytes the camp was never dry, even when clouds rolled back for a few hours.

Despite daily, heavy rainstorms we were short of water. Owing to the porous nature of the ground these mountains have no surface water; there are no streams above 400 feet. I had to devise a system of gutters made of split bamboos to collect rainwater from the leaf thatch. Standing water left in the camp interested all manner of creatures. Frogs came to canvas buckets and rainwater tins, likewise dragonflies and mosquitoes; aquatic beetles turned up in my bath left filled a couple of hours before I used it. A cranefly was discovered ovipositing in my salad.

In the valleys between ranges occur cracks of an alarming depth. They are apt to be partly bridged by rocks and overgrown by a network of creepers and roots. It is not safe to walk without a stick to sound every step in advance. One valley would have been a convenient short cut to my second camp, but had to be avoided because of a tragic accident a few years previously. Five boys were hunting cuscus there, only four returned. They knew the pit into which the missing boy must have fallen, and even tried to climb down into it on a creeper rope, but they could not see or hear anything of him. I went to examine the ground myself, and was soon satisfied. There were several very deep cracks. Stones dropped into them continued to fall for thirty seconds,

and one could not feel certain even then that they had reached bottom. We had to cross nine peaks to avoid that valley, but nobody grudged the trouble.

My second camp was about 4 miles farther inland on Mount Eiori, 2000 feet. There are plenty of mammals on Japen, whereas Waigeu has remarkably few. On Mount Eiori my hunter seldom returned empty-handed. The whole mountain was of rich dark soil with outcrops of clay shales; at the base was reef limestone, with basaltic rock and sandstone with other rocks in the banks of streams. This was the only non-limestone mountain that I saw on Japen; according to the natives it is the only one on the island. The forest is luxuriant, different from that of the limestone ranges which may be the attraction for herbivorous animals. On several occasions I saw tree kangaroos, feeding on the ground or sleeping high in trees. My collection of skins includes two species of tree kangaroos and four of cuscus.

Drying and preserving skins was rather an anxiety because of heavy rainfall, though the conditions were much better than those of the first camp. It was exposed to wind from any quarter except the south, where I had to leave forest standing because of dammar trees, which are protected by the Netherlands Government. There were fine specimens of dammar above my clearing, which became a source of danger during the change of season in October, when the north-west monsoon sets in with fierce gales of almost cyclonic force, called the *wambrau*. They usually last three days, but in 1938 they blew continuously for ten. Instead of diminishing in force they were raging on the tenth night, and trees came down which had stood stoutly against them all that time. Sheets of solid rain fell all night, my hut rocked on its piles; if it had not been for the fact that four of them were living trees, the whole structure must have crumpled up. Everything movable had blown away, and from 8 p.m. until 5 a.m. I was crouched on the platform watching the silhouette of trees just visible against the sky. Trees were falling down the precipices. I watched three enormous ones crash in half an hour. The *kulis* were under my hut, and if a tree seemed likely to fall towards the clearing we were ready to dash into a cave under a large stub. Only the largest specimens could reach the huts, and luckily none fell in our direction. It was daylight before the wind abated sufficiently to allow us to rest. The *wambrau* finished by sundown that day, and fresh trails had to be made around camp because of landslides and fallen trees.

My third camp was on Mount Oude, the highest range on Japen, 4000 feet. I built huts, but only remained ten days because of the excessive rainfall. There were only a few hours of sunshine during that time. All the ranges crossed on the way were of reef limestone when once we left Eiori. There is a rich fern flora on Mount Oude, and I took several species not met with elsewhere. The rocks were full of little frogs, which kept up a deafening chorus night and day: we brought back over two hundred. The *kulis* killed a white-footed rat near the camp which was also living inside a rock: it proved to be a new species. Insects were scarce but interesting: the moth screen was a complete failure because of dense clouds.

The six months on Japen were spent entirely in forest camps, except for a week in Montembu to investigate the rivers just before I left the Dutch territory.

SLAVONIC STUDIES: A REVIEW

UNDER the leadership of Professor S. Konovalov, head of the Russian Department of the University of Birmingham, a group of specialists in East European affairs have in the course of the last nine years prepared and published a series of Monographs, Memoranda, and Bibliographies upon certain Slavonic countries which, although mainly economic in character, contain much information of interest to geographers.[1] The appearance during last year (1939) of Monograph No. 5 (Polish Series), 'The foreign trade of Poland,' and Memorandum No. 12 (Russian Series), 'Results of the Second Five Year Plan: the project of the Third Five Year Plan,' makes this an appropriate occasion for a brief review of certain aspects of the economic geography of both Poland and Russia for which Professor Konovalov's researches provide reliable data.

It is easy to be wise after the event, but it is clear that there were features in the changing trends of Polish trade which by 1939 were calculated to arouse jealousy and apprehension in Germany. As figures given in an earlier Memorandum ('The national income of Poland,' No. 4 (Polish Series) 1937) clearly show, the backbone of Polish economy was the small farmer, whose industry provided one-third of the national income. The farm workers and the large landowners, groups comparatively few in numbers since the compulsory parcellation of the land under a law of 1920, added a further fraction of one-twelfth to the national income as derived from the land. Nevertheless, farming could hardly be said to be well rewarded, for a classification of the population by occupations shows that 64 per cent. of employed persons were in agriculture, while only 41 per cent. of the national income was derived from it. Industry, commerce, and the learned professions are alike more lucrative to the average individual, and the industrialization of Poland was proceeding, if not rapidly, yet steadily and unmistakably. Poland's traditional rôle in relation to Germany had been that of food base, especially as regards meat and other animal produce; she had, too, provided a valuable market for German chemicals, dyestuffs, machinery, electrical goods, and drapery. Both aspects of this relationship were being undermined by Poland's new economic policy, and the position was the more distasteful in that the coal and metal bases of Polish industrialization were situated mainly in Silesia, formerly part of the Reich. Silesia, too, provides one of the very few European sources of white metals, lead, zinc, and tin. Statistics revealed yet another trend dangerous in German eyes. Danzig merchants and shippers were meeting with increasingly successful competition for Poland's bulk shipments of coal, timber, and metals from their Polish rivals at Gdynia. All these points emerge clearly from the statistical analysis of Polish trade under review, and in destroying Poland, Germany was destroying a new trade rival. That she intends Poland to return to the status of a peasant-farming community is suggested by the action taken to destroy Polish intellectual life, *e.g.* the removal *en bloc* of the teaching staff of Cracow University to a concentration camp.

Turning now to Russia, there is much to be learned from these Memoranda that has a bearing on the current situation. To understand the problems presented by the new economic planning (N.E.P.) of the Soviets, it is necessary first to recall that the Russian lands are continental in extent, continental in the

[1] All these publications may be obtained from the Russian Department, the University, Birminghnm 3.

numbers and racial diversity of their population, continental in respect of the physiographic and climatic variety of the regions which they embrace. The most apt comparison is with the (to most people) more familiar continent of North America. If we exclude Central America and the West Indies, then continental North America has approximately the same size as Russia, about 8 million square miles, while of the two areas Russia has the greater population by about 5 per cent. The figure of 170 million inhabitants, given by the Russian Census of 1939, falls short by more than 10 millions of the figure aimed at in the Plan, but nevertheless represents an increase of 15 per cent. during the intercensal period 1926–38. So far as types of country in the two areas under comparison are concerned, numerous homologies immediately spring to the mind, but the predominant west-to-east trend of the Russian lands is responsible for the fact that she has no equivalent of America's most remarkable natural asset, twin temperate ocean margins, broken by numberless penetrating estuaries, *rias*, and fiords. Russia's aggressive wars have for centuries been traditionally directed towards the acquisition of an ice-free seaboard on one or other of the great ocean highways: the present military situation, then, presents nothing new.

As in Poland, but far more vigorously and vocally, the Russian slogan has been "industrialization," with its necessary correlative of "urbanization," and the census figures for 1939 afford interesting evidence of the measure of success which the drive to the towns has attained. While 23 millions have been added to the total population since 1926, the urban population has increased by 30 millions, so that there must have been an absolute decrease of 7 millions in rural areas. Even so however the proportion of urban to rural populations is only 33 to 67, and if, leaving aside the vexed question of the exact definition of these terms, we take the corresponding official figures for the population of continental North America (as already defined) we find there a proportion of 57 to 43. The corresponding figures for France, usually considered a well-balanced country, are 52 to 48. There is no evidence that the Russian authorities have set before themselves any norm or optimum relationship between town and country, factory and farm. The arguments used in favour of urban life have been social rather than economic, the town promising greater amenities. Competent observers are already finding evidence that one result of this propaganda is likely to be a difficulty in keeping the younger generation on the land in sufficient numbers to fulfil the Plan for crops and stock. Professor Konovalov however, quoting from Russian sources, affords us some proof that a period of more realistic thinking and planning has begun. The worship of mere bigness, whether in towns, in industrial units, or in output, a worship expressing itself in the astronomical figures which met the inquirer's eye at every turn in, for example, the Soviet Pavilion at the Paris International Exhibition, and which characterize Russian economic literature in general, is to be checked and con-controlled. "The Third Plan (declares M. Molotov) requires the discouragement of *megalomania* in construction, which has become a positive obsession with some of our executives: it requires the steady transition to the building of medium and small-sized industrial units in all branches of the national economy." The principle of planning with regard to function, and not with regard to national or civic or individual vanity, would seem obvious enough, were it not frequently disregarded even in countries with so long an urban experience as our own.

A branch of Russian planning which is deserving of much closer attention than it has so far received is the much-vaunted new geographical location of industry. What may be termed the "obstinate gregariousness" of industry, at

any rate of capitalist industry, and its reluctance to shift, is sufficiently exemplified in this country and in the United States, and it may well be that the high costs of production under the Soviets, which are shocking even the Russians themselves, are due in part to a too hasty choice of uneconomic locations. Professor Konovalov makes the statement, as though it were axiomatic, that "a more *rational* distribution of industrial production" is being achieved by "the location of industry in closer proximity to the source of raw materials." The veriest tyro in economic geography could point out the many necessary qualifications which this statement requires, and it is likely that many of the new industrial centres in Russia must find their justification only in their social and strategic advantages, for which high costs of production are the price.

There is however everything to be said for a well-thought-out scheme for developing branch establishments and workshops in connection with the trunk railway routes which pass through tracts of country at present thinly peopled, and the Russian economists might benefit by making a careful study of the railway history of Canada and the United States. Space does not allow of more than a bare comment upon the important material which Professor Konavolov has assembled relative to the Russian railways. It is sufficient to say however that in spite of immense efforts and substantial progress they are not yet adequate to their expanding tasks, and that in addition they have been unduly burdened by necessities of transport arising solely from faulty industrial location. The reconstruction of the permanent way is officially admitted to be "far behind" requirements, and a sum of 37·3 milliard roubles is to be allotted to necessary improvements and extensions of the railway system, and to the provision of additional rolling stock under the Third Five Year Plan. It would appear therefore that transport requirements for the movement of bulk supplies to Germany, or for the maintenance of a Russian army operating in the West, could only be met at the expense of the non-fulfilment of plans for the normal well-being of the Russian people themselves. E. G. R. TAYLOR.

REVIEWS

EUROPE

HISTORICAL GEOGRAPHY OF SOUTH-WEST LANCASHIRE before the Industrial Revolution. By F. WALKER. (Remains . . . connected with . . . Lancaster and Chester, v. 103, N.S.) *Manchester: Chetham Society*, 1939. $8\frac{1}{2} \times 6\frac{1}{4}$ *inches;* xvi+156 *pages; sketch-maps*

The region of south-west Lancashire dealt with in this study is bounded on the north by the Ribble, on the west by the sea, and on the south by the Mersey; its eastern boundary is less distinct physically, especially to the south, where it appears somewhat artificial, for it is taken as roughly a line "from Preston through Leyland, Coppull and Hindley to Leigh." It is the author's purpose to prove that this region has displayed "characteristics which at different times have distinguished it clearly from other parts of the county and particularly from the adjacent area of South-east Lancashire." He shows that its early isolation was due to physical conditions, especially the peat mosses and marshes, and that its predominantly Norse colonization contrasted with the Anglian settlement and Danish influence found in the south-east. After the Norman Conquest the south-west developed economically, for its soil and climate provided conditions more suitable to arable cultivation than were found in at least the uplands of the south-east. The latter area developed in the sixteenth century with the increased importance of sheep farming which provided the raw material for a textile industry based on the Domestic System. Thus while the south-west remained largely agricultural the south-east gradually became industrialized, a process accentuated by the industrial changes of the eighteenth and nineteenth centuries. This contrast between the two regions extended, as Mr. Walker shows, beyond the economic field, for the south-west retained a large Roman Catholic population, whereas the south-east became Protestant and Puritan. It was this religious cleavage, combined with such personal factors as the loyalty of the south-west to the royalist Earl of Derby, that accounted for the bitter strife of the royalist south-west against the parliamentarian south-east in the Civil War. That struggle may itself have assisted that relative decline of the south-west which the growth of modern industry was to complete.

Many interesting points emerge from this study, such as, for example, the very early commutation of service made possible by the limited demesne cultivation where the demesne land of the hundred was attached to the capital manor alone. On the other hand two general criticisms suggest themselves. Firstly, the contrast between the south-western and south-eastern regions appears at times to be forced. Thus in the later Middle Ages the south-east of Lancashire may have been economically undeveloped in comparison with the south-west, but can the latter really have had "a rich and varied economic basis of life" if, as the author contends, even into the seventeenth century it "remained a completely rural and agricultural region where the preponderance of subsistence farming for local needs and the absence of commerce, made roads (as distinct from local farm tracks) almost unnecessary?" The second criticism is more fundamental, for it involves the question of the nature of historical geography. The later chapters of this study appear to devote more attention to purely political, religious, and military history than is warranted by even a wide definition of historical geography. Thus nearly three-quarters of the chapter dealing with the important period from the Civil War to the Industrial Revolution is devoted to political and religious developments. These developments

may be relevant to the main study, but concentration on them seems to have led to the neglect of more purely economic changes, which are at least equally relevant. This is seen particularly in the absence of any reference to coal mining during the period under review. Yet two of the five colliery districts into which Professor Nef divides the Lancashire–Cheshire coalfield ("The rise of the British coal industry," i. 61) fall within south-west Lancashire. Both these districts appear to have been important in the seventeenth century. Some description of them would surely have been as relevant as the account of the religious policy of the later Stuarts. T. S. W.

THE BALTIC STATES: . . . Estonia, Latvia, Lithuania. Prepared by the Information Department of the Royal Institute of International Affairs. *London: Oxford University Press*, 1938. $8\frac{1}{2} \times 5\frac{1}{2}$ *inches;* 194 *pages; sketch-map.* 7*s* 6*d*

It is a little unfortunate that so soon after this publication appeared a revolution should have supervened in the foreign relations of these three states; but its value is not thereby lessened, because further developments are by no means improbable. To appreciate the changes wrought and to be wrought now that this stretch of Baltic seaboard has once again fallen under Russian control we shall doubtless frequently have recourse to this manual, which covers politics, finance, and economic development during the post-Great War reconstruction and the following fifteen years when these rather luckless children of the Versailles Treaty were free to organize themselves without interference from Great Powers. It should perhaps be emphasized that it will be most useful to persons already possessing some knowledge of the history and geography of the Baltic, for the reader must supply his own interpretation of facts. The authors give no geography and do not provide more than brief notes on events prior to 1919, or on the nature of the Russian economic system to which these states belonged before 1915. Thus for example the reader must form his own judgments on the part played by the three states in the balance of power in the Baltic, or on the wider significance of agrarian reorganization and the reorientation of foreign trade towards Great Britain since 1923. J. H. G. L.

BALTIC ROUNDABOUT. By BERNARD NEWMAN. *London: Herbert Jenkins, Ltd.*, 1939. $8\frac{1}{2} \times 5\frac{1}{2}$ *inches;* 284 *pages; illustrations.* 10*s* 6*d*

Mr. Newman likes to take his holidays with a bicycle, living simply and talking to all and sundry, in spite of difficulties of language. The countries he visits are frequently soon afterwards in the news, and this is not his first book of topical interest. In it he describes with practised skill a clockwise ride round the Baltic from Denmark to Hamburg. His progress through Denmark and Sweden was rapid, for in neither country could he find many people with whom to discuss politics; in Denmark they would not, in Sweden they could not. The Åland Islanders were equally disappointing: they refused to believe that they could be concerned in international politics. The Finns were more sympathetic; he is able to talk of their relations to Germany and Russia and praise their education and simple life, also their splendid physique. A visit to the monastery of Valamo increases Mr. Newman's enthusiasm, for he likes his discomforts.

Perhaps the most entertaining part of his book is his description of the primitive inhabitants of the Setus region of Estonia, whom he calls "a flashback to the Russia of a century ago." But many people will find greater interest in his conversations with the Germans of Memel and Danzig, which are illuminating in view of recent events. M. S.

THE ALPS. By R. L. G. IRVING. *London: B. T. Batsford*, 1939. $8\frac{1}{2} \times 5\frac{1}{2}$ *inches;* viii + 120 *pages;* 131 *illustrations and endpaper sketch-maps.* 10*s* 6*d*

The most attractive part of this book is the photographs, some of which are indeed beautiful: it is a pleasure to turn the pages and be at once transported into the old familiar places. The book itself is really a glorified guide to the Alps. But whereas the good guide-book contents itself with giving useful information, this book tries to be informative in a sentimental way which proves trying to the adult reader. The text resembles an elementary school book on physical geography. It is avowedly written with the object of introducing the young holiday maker to the pleasures of the Alps, and as such it may prove of value to the young person of school age, but for readers of maturer years the superficiality of the information will prove unsatisfying and the author's style irritating.

An introductory chapter touches upon such diverse subjects as the physical geography, elementary geological structure, vegetation, and fauna of the Alps. The pleasures of photography in the Alps are recommended. One or two references to historical events are made; and some remarks upon the languages encountered in the different districts, as well as upon peasant life in the villages, are thrown in. None of this information is detailed enough to arrest the attention. There follows a number of chapters dealing with special districts and climbing centres in the Alps. Here an attempt is made to present the particular attractions of the districts which the author has had occasion to visit.

C. B. M. W.

THE REAL HUNGARY. By PAUL TABORI. *London: Skeffington and Son*, 1939. $8\frac{1}{2} \times 5\frac{1}{2}$ *inches;* 288 *pages; illustrations.* 12*s* 6*d*

Mr. Tabori has succeeded in finding a new approach to his subject in this wise and entertaining book. He avoids enveloping Hungary in a veil of sentimental romance; and he does not base his account on those political problems of post-war Hungary which dominate many recent books. With an engaging lack of pretentiousness he claims to speak of the "trivial and unimportant things which may be missing from the more important books." As a writer he is highly effective; descriptive passages, amusing and well-told anecdotes, bits of historical information are pieced together into an interesting and readable narrative. The resulting picture is indeed that of the "real Hungary," though the reality may be often that of the surface. There is no better guide for the Englishman who wishes to spend a month or so in a hospitable and inexpensive country. Here is authoritative and amusing information on such widely divergent topics as hotels, cafés and tipping, Hungarian theatres, press and sport, music and hunting. Mr. Tabori obviously feels most at home in the atmosphere of the Budapest cafés, with their clientèle of artists, writers, and stage people But he can also give a convincing picture of the peasants of the Great Plain, the ancient culture of the towns in Upper Hungary, and of the mellow atmosphere of Transdanubia. The book is written throughout in excellent English; the author has the gift of picturesque phrase which make some of his descriptions, like those of St. Margaret Island and the city of Kassa, linger in the memory.

If the critic insists on carping, he will find some scope in Mr. Tabori's geographical and historical data. The boat trip from Vienna to Budapest is charmingly described, but one would look in vain for the Csallóköz and the Szentendre Island in those reaches of the Danube to which the author assigns them. Nor does history confirm his contention that the Huns came *after* the Avars into the country and that Attila's battle at "Caparnaum" was followed about a hundred years later by the Hungarian *Landnahme* (p. 27); in point of fact, the two events

were separated by some four centuries and a half. One is also startled to hear of the Treaty between the Austrian Emperor Francis and Napoleon in the year 1790 (p. 189). These are however but slight blemishes in an entertaining book, fully compensated by the sixteen magnificent illustrations and the congenial translations from modern Hungarian poets among whom Ady is accorded special prominence. N. J. S.

LES VILLES DE LA RUSSIE SUBCARPATHIQUE (1919–1938): l'effort tchécoslovaque. By JEAN MOUSSET. (Trav. Inst. études slaves. XVIII.) *Paris: Droz*, 1938. 10×6½ *inches; 140 pages.* 30 *fr.*

REPUBLIC FOR A DAY: an eye-witness account of the Carpatho-Ukraine incident. By MICHAEL WINCH. *London: Robert Hale*, 1939. 8½×6½ *inches; 286 pages; illustrations and sketch-map.* 12*s* 6*d*

These two publications, the products of differing conditions and types of investigation, are remarkable for their general agreement on racial and economic problems, and for the picture they afford of Ruthenia before and during the break-up of Czechoslovakia. M. Mousset's monograph is the result of ten months' stay, apparently in 1937, in Ruthenia; his bibliographies list mainly Czech works, but include some Hungarian. Mr. Winch, a foreign correspondent, arrived in Chust in January 1939 and stayed until the Hungarians marched in two months later. The French monograph is well planned, but deals better with racial questions than with economic ones. Mr. Winch's book is straightforward and admirably written.

Užhorod, Mukačevo, Berehovo, and Chust contained little more than one-tenth of the population of a province whose main resources were its forests; but in a region the size of Norfolk and Suffolk, more than one-third of whose area was unproductive, the four towns were important enough to serve as the basis of M. Mousset's study. Occupational groups follow racial lines, and as races in the sub-Carpathian plain meet but do not mix, economic problems beget racial discontents. M. Mousset describes the five races (including the Jews) concerned, starting with the earliest comers, the Ruthenians, whose origin and affinities bear on the whole Ukrainian problem. He distinguishes between the old-established Jewish traders in the towns and the impoverished Jewish farmers who fled from Russia in the nineteenth century. He notes that whereas the Hungarians merely made use of the towns existing when they overran the country, it was left to the German traders, few in number but always important, who entered the territory in the Middle Ages, to found new urban centres. Census statistics, so far as they may be trusted, showed a substantial recent drop in Germans and Hungarians in the towns, and a rise in the number of Ruthenians. M. Mousset then describes the four towns, supplementing historical information with his own impressions of their character and people.

The last chapter is devoted to the economic future of Ruthenia. M. Mousset concluded that, despite progress since 1918, the outlook was grim: export was strangled by customs barriers, poor communications impeded the development of an internal market, capital and skilled labour were lacking, and the province depended far too much on timber, besides which salt mines, distilleries, beet sugar, and textiles were of small account. He praises the Czech effort in roads, hygiene, and education, for which there was little return, and he hoped that the Czechs would continue as pacifiers and mediators; but he saw that much of the development was artificial, that the standard of living remained very low.

It is of the collapse of the Czech effort, which had apparently weathered the economic crisis, that Mr. Winch gives a vivid and unbiased account. He too deals with the racial and religious problems, and he well maintains the political

history of those two months as his background, but he is freer than M. Mousset to give a personal touch to the story. Though the season and circumstances made travel difficult, he managed to see something of the countryside, and thus partly balances M. Mousset's preoccupation with the towns. His descriptions of the forests and of the peasants supplement M. Mousset's statistics; the men and women he met symbolize the racial forces at work. When Mr. Winch arrived Carpatho-Ukraine was virtually severed from Prague, on whose generosity it had lived. It was too backward to form the nucleus of a Greater Ukraine, even had the patrons of that movement desired it to do so; the abolition of the Hungarian frontier was the only solution of its economic problems, and this, though Hungary was in no position to continue the constructive work of the Czechs, at least offered the peasant, working in the forest or on the Hungarian plains, a chance of a livelihood. Two years previously M. Mousset remarked: "A vrai dire, cette population ne se prête guère aux réformes."

J. P. H. M.

ASIA

THE NAKED NAGAS. By CHRISTOPH VON FÜRER-HAIMENDORF. *London: Methuen and Co.*, 1939. 9×5½ *inches;* xiv+244 *pages; illustrations and sketch-map.* 15*s*

The author is a young Austrian ethnologist who, after finishing his university studies, went out to the Naga Hills in Assam to put what he had learnt into practice in the field. He spent a year amongst one of the least known of the Naga tribes (the Konyak), necessarily seeing also some of the other tribes, notably the Angami, through whose territory he had to pass in order to reach the remote village of Wakching close under the Patkoi range. The result is a very interesting and readable book, finely illustrated with photographs which the layman, with only a mild curiosity in primitive man, can enjoy. Indeed, the layman who is only mildly curious on the subject is likely to put the book down with his interest quickened. After reading it, one feels that the writer thoroughly enjoyed his lonely life, that he made real friends with the rather shy Konyaks, and that he has added something to the world's stock of knowledge. The reviewer therefore believes that Dr. von Fürer-Haimendorf has earned a little criticism offered in a friendly spirit.

"The Government has pursued unceasingly a policy aimed at the preservation of native culture " (p. 60). In other words, an attempt has been made to preserve the Naga Hills from contamination, chiefly for the benefit of anthropologists. Selected contacts are encouraged, or at least allowed to take their course; but in the main the Naga tribes have been penned in, to be preserved from those influences and tendencies summed up as evolution, which are at work in most parts of the world. They may enjoy some of the benefits which science bestows on the human race. They are for example allowed hospitals and medicine, but not technical instruction. They may wear the verminous unwashable blanket, but not the hygienic shorts. They may work on the road, a soul-destroying, monotonous toil, but they are not encouraged to go down to the plains to look for work in the towns. However, they do; they have to. Nor must it be forgotten that a Naga Labour Corps was sent to France in 1916–18. The author says a good deal, in a mild and kindly way, about the missionaries destroying the social organization of the Nagas. But the Government has preserved only those elements of which it could approve; naturally it had to stamp out head-hunting. Yet head-hunting and human sacrifice are probably the basis of Naga social organization, and once they were destroyed the whole edifice began to collapse. The final result has been poverty, overcrowding, land

hunger, exodus of the young and enterprising, and a considerable amount of unrest. The missionaries are blamed for trying to introduce tea drinking in place of rice beer swilling, and we are told, surprisingly, that the introduction of tea "which must be bought" disturbs the "economic balance." The reviewer thinks that the argument set forth on p. 57 in praise of rice beer, which he endorses, would be stronger if it were not upheld by a fallacy. But though the author politely jibes at the missionaries, and though his arguments in favour of the *morung* will not bear serious examination, he is capable of making excellent suggestions such as that relating to the decoration of Naga churches (p. 59).

If the Nagas can only suffer disaster as a result of Christian influence, they must be inferior human material to the Kachins of north Burma, who on the whole have benefited from the work of the missionaries. To doom the Nagas to a perpetual benightedness in order to preserve their culture seems a cruel kindness, even if it were possible. Inevitably perhaps to the westerner coming in contact with the eastern savage for the first time, the black spots in his own culture look blacker, the white spots in the savage culture whiter, than they really are. But it seems a pity that Dr. von Fürer-Haimendorf is not more consistent. He is disposed to say "yes" to every Government decree without giving the matter much thought, and to denounce missionaries, who have never been popular in the Naga Hills, but his somewhat shallow arguments do not seriously mar an entertaining and well-written narrative. Here is insight, humour, and observation of no mean order. F. K. W.

NETHERLANDS INDIA: a study of plural economy. By J. S. FURNIVALL. *Cambridge: University Press*, 1939. 9×5½ *inches;* xxii+502 *pages; maps.* 25*s*

It is difficult to describe in a few lines the merits of this "remarkable" book, as it is called by Dr. A. C. D. de Graeff, ex-Governor General of Netherlands India, in his introduction.

The author has succeeded in giving a picture, stage by stage throughout history, of the economic and social progress of Netherlands India against the background of political developments. He has done this with a really scientific sense and at the same time as a man of action, whose work lay in Burmese administration for several years. This enabled him to make a comparison between the achievements in Netherlands India which he has profoundly studied and of which he has seen the results, and the work in Burma, in which he has cooperated himself, and he has made this comparison in a fairly objective way. He has set himself to analyse the nature of the old Dutch overseas territory and to outline the ways in which difficulties specific to colonial countries have been solved there; this makes his book valuable not only to foreign but also to Dutch students.

He has sharply characterized the activity of the Netherlands United East India Company, originally a commercial body, but one which had to secure trading bases in the Archipelago as a central authority with sufficient power to enforce discipline among its servants, to negotiate treaties with native rulers, and to drive off foreign competition. Years of disturbance followed the fall of the East India Company, a consequence of the revolution of 1795. The period of English occupation under Raffles—which is, like the rest of the subject, dealt with impartially—had great influence upon political and economic development during the nineteenth century. The currents of economic policy during that century, the foundation of constitutional law, and the penetration of modern views on colonial administration, are excellently described.

A new line was taken by the government of van den Bosch, who claimed

liberal views but who, on the other hand, believed that an ignorant people had to be educated before more enlightened institutions could be applied to them. He intended to encourage production by promoting European enterprise, and at the same time by requiring natives to pay their tax in export produce; this was the essential feature of the "Culture System" which was in force from 1830 to 1850. The author has put forward very clearly the miraculous economic change consequent upon this system and he draws attention to its merits as well as to its great drawbacks. With the passage of years it came to hamper economic progress.

The time became ripe for a transition to liberalism, and private enterprise proved to be ready to take the place of compulsory organization. The years after 1850 showed a considerable development of agricultural production. The Agrarian Law of 1870 in which the fundamental principles of land policy were laid down is discussed as being of special importance in this connection—and very properly so. The growth of production proved however not to be a guarantee for general welfare, neither did freedom of enterprise contribute to the unification of society. On the contrary the European and Chinese element grew in numbers and wealth, whereas the natives "saw their own social life disorganized, without gaining enfranchisement in any more comprehensive social order." Here the author lays stress on the fact that the plural character of the society was sharpened in those days. This leads him to consider the economic and political direction in the Netherlands India of to-day, which acknowledges this plural character.

Netherlands India took its present form after 1900; valuable progress has been made during the past decades in using the experience gained in the previous century. The author assigns immense value to the control over Netherlands Indian government having been given to the Dutch Parliament. This has certainly been beneficial; manifold improvements however have been brought about without the direct interference of this body. Netherlands India had to learn gradually to manage its own affairs. The centralized administrative machinery which had served well enough in former years proved to be inadequate for a constructive policy of building up human welfare and unsuitable for the creation of an autonomous regime. Administrative reforms which are based on decentralization are described consecutively, which gives the author the opportunity of drawing attention to the fundamental differences between the governments of Netherlands India and British India.

With the political development as a background the author has shown the way in which the Dutch of the twentieth century have discharged the economic part of their task under the "dual mandate," namely by developing the natural resources of the overseas territory and, on the social side, by developing the human wealth of the peoples for whom they have taken responsibilities. The author summarizes the manifold aspects of economic and social life in Netherlands India in considering its nature as a plural society—a society in which distinct social orders live side by side, but strictly separate, within the same political unit. This country, being a tropical dependency where the rulers and the ruled are of different races, is an extreme type of such an organization. The theory of the dual economy advanced by Professor Boeke provides the starting-point for the author, who differs from him as to the essentials of the problem. Whereas Boeke emphasizes the contrast between the pre-capitalist (native) and capitalist (European) social orders as the essential problem in dual economy, the author maintains that in a plural society there is no community as a whole and therefore the economic policy cannot aim at providing adequately for the expression of one social will, but has to care for organization of the different

social demands. He agrees with Boeke that Western economic theory can only be of limited application in a tropical dependency, but he argues it on somewhat other grounds.

We cannot quite subscribe to the author's view that in the present century the dual character of society in Netherlands India has come to the fore more prominently, partly as a consequence of a shifting in agricultural conditions, because capitalist interests, far from being at one with agricultural and rural interests, are at present more and more concentrated in the towns. Mr. Furnival evidently believes that the contact between European agriculture and the natives has declined in recent years. But there is another thing which does not point to a sharpening of the dual character and to which the author has drawn attention, although not directly in this connection, namely that in the autonomous territories formed after the Government reform, the cooperation between the different social orders has tightened the contact between them.

The author refers to British India where with the reforms of 1917 the principle of law as the sole foundation of society was abandoned in favour of that of nationalism, a criterion in political affairs which was not purely economic; but he says "nationalism within a plural society is itself a disruptive force, tending to shatter and not to consolidate the social order." In this connection he pays special attention to the solution in the Netherlands Indies where the Government has acknowledged the plural character of society, both in politics and in economics; he calls it the "federal solution."

We have only dealt with a very few points out of this interesting book, which certainly deserves to find a large circle of readers. It is very usefully documented, with a bibliography to each chapter. C. R.

AFRICA

THE AFRICAN, TO-DAY AND TO-MORROW. By DIEDRICH WESTERMANN. Second edition. *London: Oxford University Press, for the International Institute of African Languages and Cultures*, 1939 (*first published in* 1934). $7\frac{1}{2} \times 5$ *inches;* xvi+356 *pages; illustrations and maps.* 8*s* 6*d*

THE SCHOOL IN THE BUSH: A CRITICAL STUDY OF THE theory and practice of native education in Africa. By A. VICTOR MURRAY. Second edition. *London: Longmans, Green and Co.*, 1938 (*first published in* 1929). $9 \times 5\frac{1}{2}$ *inches;* xxiv+454 *pages; illustrations and map.* 15*s*

The first edition of Professor Westermann's book was reviewed at some length in the *Journal* for August 1934. The text has now been brought up to date and the title extended by the addition of the words "and to-morrow." The altered title does not indicate attempts to prophesy concerning the future of the African, but a desire to focus attention on the transformation that is taking place. The insistence on this is marked throughout the book and is in some respects the most valuable part of it. Much fresh material, chiefly of anthropological interest, has also been added, as well as fourteen illustrations taken from the German edition of the original work, and two useful maps, one showing types of economic life, the other the distribution of races.

The point of view of the anthropologist is present throughout, but it is not overstressed, while the language is straightforward and non-technical, and the subject-matter is of importance to all interested in the welfare of the African. This is clearly shown by the wide range of topics, which include family life, native arts and crafts, old and new governments, education and missions, the clash of races, and a particularly interesting chapter entitled "Disintegration

and reintegration." There is nothing that is sensational or strikingly new, and there is no over-repetition of the significant facts. Deductions to be drawn from facts are clearly stated, and the comments on their bearing on the various aspects of the life of the African are discerning.

'The school in the Bush' has also reached a second edition, the first having appeared in 1929. The interval between the two editions saw great activity and many changes in African education, thus necessitating some revision of the original text. The book gives a comprehensive survey of practically the whole field of African education, and naturally treats educational problems in much greater detail than is possible in Professor Westermann's book. In the main it is a discussion of principles documented by particular instances, and it is natural that the examples are most interesting where they are drawn from parts of Africa of which the author has personal experience. The book is divided into four parts: the Background, the Foreground, the Middle Distance, and the Horizon; there are three appendices.

One of the three "background" chapters, appropriately the first in the book, is entitled "Geography," and it is definitely disappointing because, although many of the main facts are mentioned, they are not either arranged or treated so as to present a clear picture of the geographical background of the topics discussed later.

The seven "foreground" chapters are chiefly concerned with missions, village schools and teachers, the training of teachers, the Church and State in the administration of education, the mother tongue, and the content and form of African education. There does not appear to be a great deal of difference between the views of Professor Murray and Professor Westermann on the education of the African, so that the former's criticisms of those who find in anthropology alone a guide to policy cannot apply to the latter. But Professor Murray loves to criticize and to debate. Sir Percy Nunn, in a Foreword, says that he admires the courage with which the author criticizes established persons and institutions, whatever their authority and prestige, although owing to the fact that he (Sir Percy) had no personal knowledge of the African scene, he could not certify that the strictures were always justifiable. They are certainly not always justifiable, and in places are condemned by the evidence of the book itself, but it is nevertheless true, as Sir Percy Nunn also says, that the book shows a serious interest in the problems of African education and is a sincere and competent study of them.

The four chapters in "the middle distance" section describe and discuss the missionary societies, the government and the theory of trusteeship, the influence of negro America in Africa, and the rationale of African education. This section raises the question of indirect rule. Professor Westermann is a strong supporter of indirect rule, but Professor Murray criticizes the way in which it works. In this connection it is interesting to note that Lord Lugard contributes a preface to Professor Westermann's book while Professor Murray reprints a criticism of his treatment of this important topic, also by Lord Lugard, who considers that Professor Murray has in some particulars mistaken its underlying principles. Lord Lugard's comment and a further contribution by Professor Murray on education under indirect rule form one of the appendices.

Part IV, "the horizon," consists of a single chapter on the future of African education.

These two books are very different in their style and methods, but both are important contributions to the solution of African problems and will be much appreciated by their readers. L. B.

NORTH AMERICA

A GUIDE TO ALASKA, last American frontier. By MERLE COLBY (American Guide Series; Federal Writers' Project.) *New York: The Macmillan Company*, 1939. 8×5½ *inches;* lxvi+428 *pages; illustrations and maps (one in pocket).* 15*s*

The modern visitor to this corner of United States territory can scarcely afford to be without such an entertaining companion. To call it a guide is however no adequate description, for while it contains all the statistics which the most exacting might demand, it reads like a lively narrative of travel and adventure, to which the history of the territory (one-fifth the size of the United States) lends itself in special manner. There is probably no place where history is so packed with human comedy and tragedy as Alaska (the "Great Land" of the Aleuts, who first christened it), from its discovery by Vitus Bering and his Russian sailors in their voyage of 1741, down to the days when Peter Doroshin, a mining engineer of the Russian American Company, first discovered gold in the Kenai river basin in 1850. He brought in his trail the countless gold stampeders of later decades who have invigorated Alaska with the most cosmopolitan population on the face of the globe (of the 28,840 white people in the territory in 1930, only 10,990 were born in the United States of American parents).

Though Mr. Colby has touched chiefly on the industrial and more accessible regions, there are valuable sections on the history of Alaska and on the native races, which include four groups, the Tlingit and Athapascan Indians of the south-east, the Aleuts of the 1200-mile-long Aleutian chain (now being fortified at Dutch Harbour as a new and important naval base), and the Eskimo of the Yukon and Kuskokwim deltas, the Bering Sea, and the Arctic Ocean. Mr. Colby has modestly asked readers to indicate errors of omission or commission, and it might be suggested that in the bibliography at the end of the book Dr. Knud Rasmussen's important volume 'Across Arctic America,' which throws much light on that untravelled region, should not have been omitted.

As Mr. Colby points out, this Arctic fringe fronting the Beaufort Sea may one day become as important as the Mediterranean shore. Alaska's largest Arctic neighbour is the U.S.S.R., and the frontiers of the U.S.A. and the U.S.S.R. are divided between the Big and Little Diomede Islands of the Bering Sea by a 2½-mile stretch of water or ice. Fairbanks, the capital of Alaska, is a focal point on the world air routes, situated on the only all-land route between west and east. Facing Alaska and distant scarcely a day's flying journey, are Leningrad, Stockholm, and Oslo on the other side of the Polar Mediterranean, the last of the northern hemisphere's great inland seas to await the coming of industrial civilization: "Alaska, from being the United States' Last Frontier, is perhaps destined to become the first frontier in a new civilization north of time."

The publishers and the author are to be congratulated on the many beautiful illustrations. There is a good folding-map in the end pocket and several others throughout the chapters as required. I. W. H.

CENTRAL AND SOUTH AMERICA

THE ECONOMIC GEOGRAPHY OF BARBADOS: a study of the relationships between environmental variations and economic development. By OTIS P. STARKEY. *New York: Columbia Univ. Press* (*London: H. Milford*), 1939. 9×6 *inches;* xii+228 *pages; sketch-maps and graphs.* 19*s*

Barbados, with a total area of 166 square miles and rising little higher than 1000 feet, has for the most part a fertile soil and an equable warm, moist climate.

About two-thirds of it are under cultivation and rather more than half of this is under sugar cane. There is a little cotton, some subsistence crops, and much pasturage, but nothing except sugar really counts: cotton receives little attention unless sugar is under a cloud. Sugar and sugar products, molasses and rum, are the sole exports of significance. The population of 170,000 is 93 per cent. coloured, and the rate of increase is sufficiently high to necessitate emigration unless the sugar industry is experiencing a boom. Mr. Starkey has traced the economic history of the sugar industry from its beginning to the present day, and this incidentally introduces nearly all the various aspects of the island, except that we seek in vain for an account of the manufacture of muscovado sugar and of rum. These however are outside the central theme of the study. It has been contended that the highest degree of civilization does not necessarily develop where nature has been most kind. The normal environment of Barbados is favourable to man, and yet it is significant that, in the long alternation of prosperity and adversity which this island population has experienced in over two hundred years, the abnormal disadvantages, droughts, hurricanes, and trade crises have been the most powerful stimulants in Barbadian progress. Each blow has awakened the planters to new efforts and stirred their complacency. And not infrequently the refusal of help by the British Government has stimulated the planters to renewed efforts. It is noticeable also that each crisis eliminated weaker or less determined planters, and so left a better stock to face the new conditions. Necessity has been a strong incentive, and many periods of progress have followed conditions that have been described as hopeless. The book is thus more than an account of the economic geography of a small island: it is an intensive study of the reactions of man to his environment. The book is well documented and contains adequate maps. R. N. R. B.

I LEFT ENGLAND. By ALASDAIR T. A. LOCH. *London: The Travel Book Club*, 1939. $8\frac{1}{2} \times 5\frac{1}{2}$ *inches; 314 pages; illustrations and map.* 10*s* 6*d*

Few people are likely to read this book from beginning to end. It has little geographical value and, as a work of literature, no value at all. It purports to be "a light portrayal of the events" following the author's acceptance of an invitation to join the Andes–Amazon expedition described by Captain E. E. Loch in "Fever, famine and gold" (*Geogr. J.* 93 (1939) 536–7). "It refers," the author states, "only to my own movements between sections of the expedition," but a large part of it deals with his journey to Ecuador before the expedition began and to a hasty visit to California after he had left his companions. In between these journeys he seems to have made, at the wrong time of year, some singularly futile trips into the mountains and along a tributary of the Amazon, the only scientific results of which appear to have been malaria, insect bites, and indigestion.

The author's recollections may interest his companions, but are not likely to appeal to the general reader. He gives very little indication of the personalities of his companions, and it is not until p. 101 that the reader learns that "the main purpose of the expedition was to trace or contact the Auka tribe," and even then he is not told why it was desired to meet these "Will-o'-the-wisp butchers." The maps inserted as end-papers have no scale and are difficult to read. There is no index. Several of the twenty illustrations have little or nothing to do with the text and the rest add little interest to the narrative.

The literary style is deplorable. The mis-spelling of Spanish words may be attributed to the author's lack of knowledge of Spanish, but there is little excuse for his assertion (p. 144) that "*aguadiente*" means "teeth-water." His habit of putting words in inverted commas for no apparent reason is irritating, and

nothing is gained by splitting up a consecutive account, which properly belongs to one paragraph, into numerous short paragraphs, some of them ending with meaningless dashes.

POLAR REGIONS

TRACKS IN THE SNOW. By DAVID HAIG-THOMAS. *London: Hodder and Stoughton*, 1939. $8\frac{1}{2} \times 5\frac{1}{2}$ *inches;* 292 (*inc.* x) *pages; illustrations and maps.* 10*s* 6*d*

But for the first few pages, which would have been better rewritten after reflection, this is a delightful book. It is a personal narrative of a small and unofficial but by no means negligible expedition. Mr. Haig-Thomas did what a number of his predecessors, notable among them Vilhjalmur Stefansson and Schwatka, had done: he lived as the Eskimo live, learned their methods of hunting and sledging, and made a success of the job. He accomplished a sledge journey of 1500 miles and discovered a small island in a historically interesting sector of the Arctic. But even more to his credit, in the writer's opinion, is his attitude to the Eskimo, to his dogs, and to the animals and birds he came across in his travels.

The book is well written and magnificently illustrated. Its author provides incidentally some shrewd and piquant glimpses of the impact of the Arctic explorer, administrator, and missionary upon Arctic life and thought. To the student of Arctic history and polar technique these gleanings are the book's chief interest. For example, it is interesting to note that even an Eskimo, though he can bear the consequences with less complaint, is unable entirely to eliminate, under circumstances similar but less severe, the wet clothes and sleeping-bag problem which was in spring and winter sledging the bugbear of the Antarctic explorer of the previous generation. Again, Ootah's story that the Arctic pack surface improved as the Pole was approached, and that Peary rode a great deal of the way upon his sledge, is independent evidence that helps to make that great feat more credible. Mr. Haig-Thomas is an enthusiastic exponent of the hunting-sledge technique. Nevertheless one would also like to have heard more about his two companions, who seem to have given a convincing demonstration that for detailed scientific exploration one cannot afford to rely entirely upon hunting for subsistence, because the plenty or scarcity of game then dictates too much to the explorer his scene of action and the length of his stay. R. E. P.

PHYSICAL AND BIOLOGICAL GEOGRAPHY

ARCHITECTURE OF THE EARTH. By REGINALD ALDWORTH DALY. (The Century Earth Science Series. Edited by KIRTLEY F. MATHER.) *New York—London: D. Appleton-Century Co.*, 1938. 9×6 *inches;* xiv+212 *pages; illustrations and maps.* 12*s* 6*d*

INTERNAL CONSTITUTION OF THE EARTH. Edited by BENO GUTENBERG. (Physics of the Earth—VII.) *London: McGraw-Hill*, 1939. $10 \times 6\frac{1}{2}$ *inches;* x+414 *pages; diagrams and maps.* 30*s*

Until recently works on general geology concerned themselves mainly with stratified rocks and igneous intrusions and extrusions; yet these form only a partial veneer on the surface of the Earth. The great advances in geophysics, partly seismological and gravitational, partly the results of laboratory experiments, now make it possible to deal with the Earth as a connected whole, in spite of many gaps in knowledge.

In the first of these two books, Professor Daly expounds modern conceptions of the Earth as consisting of a heavy metallic core of roughly half the full radius, intermediate shells extending through another quarter of the radius, and an outer viscous basaltic shell or Sima, which passes into a solid crystalline Sima under the oceans and bears floating on it blocks of granitic Sial which form the continental masses. These last are penetrated by deep "seas of ingression" and locally overspread by shallower "seas of transgression." The deformation of the crust by the formation of geosynclines and the squeezing up of mountain-chains, the mechanics and physics of igneous intrusion, the differentiation of igneous rocks—are some of the chief subjects discussed in the book. Field-observations and theoretical deductions are considered in association, and photographs, maps, and diagrams are mingled in lavish illustration. Uncertainties and differences of interpretation are not shirked, but a coherent conception of earth-structure is presented in a very readable style. The student who wishes to understand the trend of modern geological thought could find no better guide.

The second book is the collective work of nine contributors, of whom one acts as editor. It covers a wider field than Professor Daly's book, and is intended for more specialized readers. Dr. Harold Jeffreys discusses the origin of the solar system; Professor Daly contributes a chapter which is a summary of large parts of his book. Dr. L. H. Adams writes on the elastic properties of rocks, while their other physical properties and their chemistry are dealt with by the late Dr. H. S. Washington. The known facts of crust-temperature are brought together by Mr. C. E. van Orstrand, while the more hypothetical treatment of earth-cooling and crustal development occupy two chapters by Professor Gutenberg. Seismic evidence is summarized by Professor Macelwane, while Professors Gutenberg and Richter treat of deep-focus earthquakes and the deductions from seismic evidence on the constitution of ocean-floors and continents. Density and gravity in the interior are dealt with by W. D. Lambert; elasticity, viscosity, strength and internal friction by Professor Gutenberg, who as editor finally summarizes the whole work. The treatment in many chapters is highly mathematical; there are many tables but only twenty-seven illustrations. The book is rather a work of reference for the serious student or research worker than one for the general reader. A useful appendix gives a large number of frequently used constants. A. M. D.

ECONOMIC AND HISTORICAL GEOGRAPHY

FROM HUNTER TO HUSBANDMAN. By J. W. Page. *London: George G. Harrap & Co.*, 1939. 9 × 5½ *inches; 256 pages; illustrations and maps. 7s 6d*

This is a well-produced book; the type is good and there is a sufficient number of good illustrations. It deals in outline with the growth of culture from the early stages of hunting up to modern agriculture. The author begins by describing the Old Stone Age hunters of Europe, and uses our knowledge of the methods of modern hunters and fishers to throw light on the past. He realizes how incompletely prehistoric remains represent the earlier cultures of which they formed part, and, in order therefore to obtain some idea of the multifarious tools and devices made of perishable material, he turns to the study of living communities. In this he seems to have found the Horniman Museum and its handbooks especially helpful. To compensate for our inadequate knowledge of early society he relies again on studies of living peoples. He is fully aware of the danger of doing this, but he proceeds with sufficient caution. Mr. Page

describes the most generally accepted ideas concerning the domestication of the different plants and animals, and he gives short accounts of several kinds of pastoral and agricultural communities. The last chapters are devoted to agricultural implements, and to social changes and religious ideas associated with the cultivation of the soil

The author has apparently written for an intelligent general public and he has done the work well. In a book of so wide a scope it is perhaps inevitable that there should be a few general statements that a reviewer might wish to qualify, and one map is hardly sufficient to represent Europe in the Ice Age. Mr. Page has sometimes drawn on secondary sources when the original is easily accessible, as in the case of his description of life in the Val d'Anniviers. Nevertheless he has used in the main modern and reliable authorities, and his book can be recommended as containing a well-balanced story. It should be useful to teachers. R. U. S.

GENERAL

THE GEOGRAPHICAL LABORATORY: a practical handbook for a three years' course in North American Universities. By GRIFFITH TAYLOR. *Toronto: The University of Toronto Press* (*London: Oxford U.P.*), 1938. 9×6 *inches; 108 pages; diagrams and maps.* 7*s*

A student leaving school to proceed to the freer development of the college, where originality and initiative will have plenty of scope, hardly expects the university professor to be tied down to a fixed syllabus and a stereotyped work book. On the other hand, a certain amount of regular routine is desirable, and perhaps Professor Taylor had this in mind when he set down these notes for his university classes. His students are told among other things to bring "a well-sharpened pencil"; most of them might be allowed to think these details out for themselves.

The laboratory work for the first year's course includes indoor cartography, indoor geology, historical development of Toronto, meteorology, projections, and block diagrams. The second and third years are on similar lines, including studies of climographs, formulae, etc. In no case are there exercises to be done out of doors in the "real geographical laboratory." Instead students are invited to assimilate a great deal of unreal knowledge and become good at laboratory gymnastics. On the other hand it is fair to hope that this manual gives merely the minimum basis of routine work. All the constructive thinking, discussion, argument, and wide reading of a university school are omitted. No reference is made to contacts with reality, to needs for actual experience, nor is there any idea of the method of teaching to be employed by the lecturer, though the contacts between student and lecturer are fundamental. Professor Taylor, who is known for original and versatile thought, with great experience behind him, and ability in holding an audience, would put his students in the straight-jacket. There is no original observation prescribed in his laboratory course; no study of pictures, films, real descriptions, economic specimens; and there is no scope for experiment, or for research or original inquiry. N. V. S.

THE MONTHLY RECORD

REPORT OF THE ROYAL COMMISSION ON THE DISTRIBUTION OF THE INDUSTRIAL POPULATION

The Report of the Royal Commission on the Distribution of the Industrial Population was completed in August 1939, but owing to the outbreak of war was not issued until January 1940. A long, closely printed document of 320 pages, it demands very careful perusal and consideration, and this note is only intended to draw attention to such aspects of the Report as are of special interest to geographers and to Fellows of this Society. The Society's evidence, including some of the specially drawn maps which were laid before the Commission, will, it is promised, be printed in a later volume. At the moment the minutes of evidence go only up to the twenty-ninth day, published in twenty-six parts. The Commission was unanimous as to the necessity for a new national authority to deal with industrial location on national lines and in the national interest, although there were differences of opinion as to the powers which the new body should be permitted to assume. As to certain aspects of the constitution and functions of the authority however all members were agreed, among these being "power to establish divisional or regional bodies to study problems of industrial location throughout the country," and the obligations of: "(*a*) Collection and coordination of information relating to location of industry in the possession of various Government Departments. (*b*) Research; and collection of information as to the various natural resources—land, agriculture, amenities, etc.—that may be affected by industrial location. (*c*) Advice . . . as to problems of industrial location. (*d*) Publicity and Annual Reports." The new Board, if constituted, would have the power to appoint staff to execute its orders and carry out its functions, and since it is obvious from our quotations that trained geographers and cartographers would be able to afford great assistance in the matters with which the authority would be concerned, it is to be hoped that this Society, through its Fellows, will keep a watchful eye upon the appointments, and see to it that the expert geographer is not overlooked. It is further the case that the proposed National Atlas, which was the subject of discussion at the Afternoon Meeting of 4 December 1939, would be a most valuable medium for the coordination of data and the supply of information to the new authority. The point must be very strongly pressed that the planning of a fresh distribution of industry, involving decentralization and dispersal of the industrial population, and diversification rather than the present regional specialization (see p. 206 of the Report), cannot be safely or reasonably undertaken except upon the basis of a close study of existing distribution patterns as disclosed by the map. The Society must be watchful, for it is symptomatic that a Memorandum on the Location of Industry, which is attached to the Report (Appendix II, p. 249), has been prepared by an economist member of the Commission, Professor J. H. Jones, and follows the conventional lines of dismissing the geographical factor in location as negligible. Beyond admitting that mines must be located where there are minerals, and ships launched where there is water, Professor Jones looks upon the earth's surface as a *tabula rasa* upon which any pattern of population and industrial distribution may be imprinted at will. The Mean Economic Man of the economist's dreams is to be placed on the Mean Town Site in the Mean Industrial Region. This is too big and too serious a subject to develop in a note. A return will be made to it when the Report is reviewed at length.

E. G. R. T.

INLAND WATERWAYS OF GREAT BRITAIN

Yachtsmen whose sphere of activity has been limited by the war can perhaps find some compensation in exploring the inland waterways of Great Britain. For such exploration Mr. W. E. Wilson's 'Inland waterways of Great Britain' (Imray, Laurie, Norie, and Wilson, Ltd., 1939, 8*s* 6*d*) is an indispensable guide-book. It gives in concise form particulars of more than seventy rivers and canals, arranged alphabetically. The information includes the name and address of the authority responsible for the navigation, the number of locks, tunnels and bridges, the maximum dimensions for craft using the waterways, the charges made for such use, and, in the case of some of the more important waterways, extracts from the bye-laws, so far as these relate to pleasure craft. There are also a number of suggested routes and an adequate map. T. S. W.

A TIBETAN LAKE

There appeared in the *Journal* of the Geographical Society of China (1937, V. iv) an account by Mr. Ginntze Hsu, of the National Central University, of a trip to Jan Nam Tso (Tengri Nor) from Lhasa in May 1935. He travelled up the Tulung valley *via* Yangbachen and over the Gorin La (5660 metres) to the south-west corner of the lake. He set out in a clockwise direction round its shores, a distance of about 250 kilometres, but was prevented by illness from completing the circuit. He left the lake at its north-eastern end by the Kiamo La, at 5800 metres the highest pass in the Nien-Chien Dan-La range, which provides a short cut back to Lhasa.

Mr. Ginntze Hsu recalls the original discovery of the lake by the Jesuits, and subsequent visits to it, including that of Littledale. He describes the three main peaks, all over 7000 metres, in the Nien-Chien Dan-La range which overshadows it, and the three passes leading across the range. The core of the range is granite, with metamorphosed schist, red sandstone, limestone, shale, etc., in the basin of the lake, suggesting that the range was formed during the Himalayan orogeny after intrusion of the granite. The highest peak resembles a huge oblong block, striking N.N.W.–S.S.E.; it is suggested that it might be a plutonic dyke, owing its present shape to glaciation. The snow-line was difficult to demarcate, but Mr. Ginntze Hsu places it at about 5500 metres. Such glaciers as he saw were not large.

Jan Nam Tso owes its name, the Lake of Heaven, to its colour. The country is barren, but the shores support three monasteries; there is plenty of game, and the lake abounds with fish, which is not caught. In his examination of its shores Mr. Ginntze Hsu concluded that the lake has shrunk considerably since the glacial period. He found three raised beaches, the lowest of which was easily traced at the north-east end of the lake. Two older shore-lines were found at the foot of the Nien-Chien Dan-La. The Tashi Dogi hills are apparently a tombola, and near Dorkia Lugu Dong another is forming at a place where Kishen Singh's map (1872) showed only an islet. Jan Nam Tso has evidently experienced two high levels, and has now fallen considerably. The mean height of the surface of the lake was found, after seven hypsometer observations, to be 4561 metres. There is a map accompanying the paper, on a scale of 1/70,000, depicting the topography of the shores of the lake by means of form lines.

GEOGRAPHY TEACHING

A monograph entitled 'The aim of teaching geography,' by Mr. A. D. Merriman (Gregg Publishing Company, 1939, 1*s*), is not so much a discussion of present aims in teaching geography as an historical summary of the changing concept of the subject since early times. It is a good summary, but there is no

comment on methods of teaching. It is interesting, readable, and clear, but does not bring us up to date. Mr. Merriman still suggests that physical geography is the most important side of the subject despite the work of Vidal de la Blache and Frederic Le Play. He attempts to define the content of geography, but nowhere defines its aim; nor is there any attempt to justify its teaching either in school or university, though Fairgrieve's dictum might well have been quoted: "The function of Geography is to train future citizens to imagine accurately the conditions of the great world stage, and so help them to think sanely on political and social problems." It is not sufficiently stressed that the progressive readjustment in the aim of teaching geography is due largely to development of educational thought. Modern scientific training which urges the importance of direct observation has been a great vitalizing force in twentieth-century geographical thought. Mr. Merriman however says: "the value of first-hand experience can easily be exaggerated, since we do not always see best through our own eyes—and this is specially true of the young." Perhaps that is why he erroneously suggests that modern geography tends to omit physical facts. Rousseau saw the value of first-hand experience when in the eighteenth century he suggested that geography should begin with a study of the home region. Vidal de la Blache never wearied of pointing out that geographers should look at their landscape as a living unity, and emphasized that the "looking" should be done first. He did not suggest that physical features were of no importance, but he refuted the idea that geographical studies begin with physical features. Geography begins with observation; and the most striking facts which come first to the notice may be human, physical, or historical. Some stress is also laid on Professor R. N. Rudmose Brown's thesis that geography cannot be really understood until all other sciences are known, without giving the opposite view, that geography is the beginning of the sciences in school. The simple geographical observations of the world around eventually lead to specialization in a particular science.

Each citizen seeks a clearer vision of his environment, to discern order in the apparently chaotic patterns of human settlement on the globe. Geography has now become more complicated and more interesting, but its purpose remains the same. N. V. S.

PERMANENTLY FROZEN GROUND IN SIBERIA

In an article entitled "Frozen ground in Siberia," published in the *Journal of Geology* for July–August 1939, Mr. George B. Cressey summarizes what is known about the distribution and characteristics of permanent soil frost in Soviet Russia, basing his discussion on Russian literature and on field work at Igarka on the Yenisei river. Permanently frozen ground is stated to underlie 3,728,900 square miles of Soviet territory, which is 47 per cent. of the total area of that territory, or more than the area of the United States. Ice is not always present, but temperatures remain below freezing-point to great depths, the greatest known depth being in the Amderma shaft (69° 50′ N., 62° E.), where the lower surface of the frozen zone is 890 feet below the surface. In some cases unfrozen layers are found between frozen ground, and unfrozen localities may surround frozen areas or be surrounded by them. The essential characteristic is a temperature below freezing persisting through at least one summer.

Permanently frozen ground has been recognized since the seventeenth century and has been studied in some four hundred localities chiefly in northern and eastern Siberia. With the building of the Trans-Siberian Railway late in the nineteenth century the practical aspects of the problem began to be appreciated, for bridges and other structures founded on ice presented new engineering

difficulties. The area of uninterrupted frozen ground is chiefly in northern and eastern Siberia, but more discontinuous areas extend into northern European Russia and southwards into Mongolia, whilst outliers are present in the Caucasus, Pamirs, Urals, and even in the vicinity of Moscow.

Maps show an interesting inverse relationship between western Siberia, which was most heavily affected by the Pleistocene glaciation, and eastern Siberia, which includes the widest extent of permanently frozen soil to-day. This tells against the former view that frozen ground is an inheritance from the Ice Age, even though it may be likely that local masses of buried Pleistocene ice still exist. It is probable that the extensive ice-sheets of western Siberia acted like a blanket of snow in protecting the ground from the penetration of frost. It is concluded that at whatever period in the past frozen ground originated, the present-day climate of Siberia with low mean annual temperature and relatively scanty snowfall is adequate to preserve it. All the permanently frozen area has at least 180 days in the year with the mean temperature below freezing-point, and almost nowhere in this area does the mean daily temperature rise to 68° F. for more than two weeks.

OBITUARY

FRANK WILD

By the death, in August 1939, of Frank Wild polar exploration lost one of its most striking personalities. The son of a schoolmaster, Wild was destined by his parents for the same profession, but after some experience as a pupil teacher he left the land for an eventful career upon the sea. He entered before the mast in the Merchant Service and rose to be second officer, but finally transferred to the Navy as a rating.

The decisive moment of his life was the day when he was accepted as a volunteer by Lieutenant R. F. Scott, who was then organizing the National Antarctic Expedition 1901–04, which inaugurated the Antarctic sledging campaign that continued until the Pole was won. Wild first showed his mettle in the adventure near Castle Rock in which Vince lost his life. Captain Scott writes: "It was not until I had selected Wild, as obviously the most cool and collected of the party, and called him aside, that I was able to get an idea of what had happened." There we have Frank Wild the explorer as those of us who served with him saw him again and again in difficult times in the years that followed. He did not have much further opportunity of distinguishing himself in the expedition after this, but served the full two years and was on several sledge journeys of greater or less length and importance, including Armitage's Plateau journey. In this way he laid the foundations of that intimate knowledge of sledging gear and routine which was so valuable to him and to his leaders in later expeditions.

In 1907 Wild was again in the Antarctic, this time under Shackleton, who had been one of his officers on the *Discovery*. The *Nimrod* expedition was without the strict naval discipline of the two led by Scott, and with the single exception of the leader himself all served on the same plane. In this, his third Antarctic year and second venture, Frank Wild played a decisive part. He was a member of the party of four men who made the greatest single step forward toward either Pole by sledge—some 360 miles—which included the pioneering of the

longest known valley glacier in the world and the translation of the quest from sea-level to 10,000 feet.

On the Beardmore glacier Wild, hurled bodily across a crevasse by the pony Socks as it fell to its death, had the narrowest escape of his life. He was a small man with immense chest development and very strong arms. He used to delight in telling us in Shackleton's hut at Cape Royds how his chest was so developed that it acted as a sounding board, and that the beating of his heart kept his companions in the three-man sleeping-bag awake until they insisted on Dr. Wilson examining him to see what was wrong. His stockiness and his strength undoubtedly saved his life on the Beardmore glacier, for he had a half-turn of the pony's halter about his wrist, and any ordinary man would have been plucked from his precarious hold on the edge of the crevasse. Copies of Wild's diary of the Beardmore glacier and plateau journey were carried by the leader of each unit of Scott's southern party, so that Shackleton and his companions acted as a ghostly pacemaker during the struggle over the same ground in the summer of 1911–12.

As a subordinate and as an ordinary member of Antarctic expeditions Wild had done supremely well. He had proved himself competent, outstanding in strength and endurance, loyal and intelligent. In the next three Antarctic voyages we can study him as second in command, still efficient, still rising to the difficult situation, still equal to the dangerous occasion, but not perhaps fully qualified for a separate command. In 1912 and 1913 he was at Queen Mary Land, 1500 miles west of Adélie Land, in command of the Western Base of the Mawson expedition. Sledging conditions here were so bad that he and his men could not cover much ground. In 1914 he again left for the south as second in command of Shackleton's Imperial Antarctic Expedition in the *Endurance*, and, having shared his leader's triumph in 1908 on the Beardmore glacier and the plateau, he was now destined to share his frustration in the Weddell Sea pack. Wild's part in the expedition was that of confidential adviser until in April 1917 Shackleton left with a boat's crew on the journey to South Georgia, leaving Wild at Elephant Island to see the remainder of the expedition through a terrible winter in a stone-walled shelter below two overturned boats, on an insufficient diet, and with worn and rotten clothes. When Shackleton left them one man had collapsed from heart failure, two more could not move, and all were frostbitten in varying degree. The blizzard that sprang up on the day the party landed at Cape Wild continued, often blowing 70–90 miles an hour. Shackleton writes, on evidence provided by the diaries of his comrades: " it is largely due to Wild, and to his energy, initiative and resource, that the whole party kept cheerful all along, and, indeed, came out alive and well . . . he had a watchful eye for the health of each one. His cheery optimism never failed. . . ." It was indeed under circumstances such as these that Frank Wild was always seen at his best: he was perhaps a better man in adversity than in success. During his absence, in 1916, he was awarded the Back Grant by this Society.

It was his fifth and last expedition that contributed to his decline. The death of his trusted leader at South Georgia on 6 January 1922 left him in command of a venture of which perhaps only Shackleton himself might have made a success. It was a hybrid affair; a strange medley of the quest of lost islands and of the exploration of once-glimpsed ice-infested coasts such as no other polar leader than Shackleton, with his Celtic imagination, sense of the dramatic, and faith in his star, would have conceived. Under Wild's hand it became a duller affair, as indeed it would under the hand of most. To crown all, on the way home he was smitten by influenza of a virulent type. The writer will never forget the shock

he received when Wild arrived at Cambridge to lecture after the expedition, so worn and weak that his cheery optimism had completely disappeared. His services to Antarctic exploration were recognized by the award of the Patron's Medal in 1924.

His days as an explorer however were clearly ended and he had lost much of the faith in himself that had carried him so far. Wild was an outstanding example of the truth that, the world being fashioned as it is, polar exploration can only be safely indulged in as an interlude in a life that is mainly directed to other ends, or by men who have other resources both material and moral to take the strain when the prime of life is past. He married after the *Quest* expedition and went to South Africa to farm, but the venture did not prosper and he lost his savings. Since then we heard of him from time to time making great efforts to keep his head above water, but with a pride that would not allow him to accept help. He died far from his friends, but he has left his mark on Antarctic history, and his old companions mourn a fine sailor, a good companion, a tenacious sledger, and a staunch friend. R. E. P.

MEETINGS: SESSION 1939–40

Tenth Meeting, 5 February 1940. Lord Moyne, Vice-President, in the Chair

Elections: Sub-Lieut. Michael Harvey Collar, R.N.; Frank F. Cunningham, B.A.; Cyril Arthur Leslie Dunley, B.SC.; Thomas Earnshaw Eastwood; Basil Y. Hall; Vincent Earl Lucas; James McQuitty; Lieut. Gavin Maxwell (Scots Guards); Harry Sharman; Mrs. John Sim; Ralph Kenneth von Goldstein

Paper: Turkey as a modern state. By the Rev. Professor J. H. Baxter

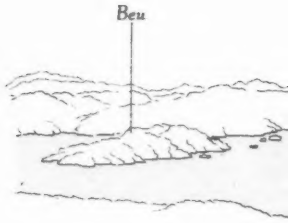
Eleventh Meeting, 12 February 1940. Mr. Leonard Brooks, Vice-President, in the Chair

Paper: The Irrawaddy river. By Dr. L. Dudley Stamp

Twelfth Meeting, 19 February 1940. Professor Kenneth Mason, Vice-President, in the Chair

Elections: Edwin Everett, B.A.; Charles Patrick Fitzgerald; Hubert Sheridan Hattin; Mrs. William Rathbone; Reverend Gordon H. Smith; Major George Arthur Campbell Taylor; Harold Davis Walton, B.SC.

Paper: An expedition to the Central Andes of Peru. By Dr. J. V. Harrison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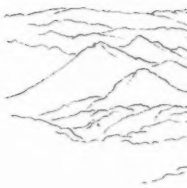

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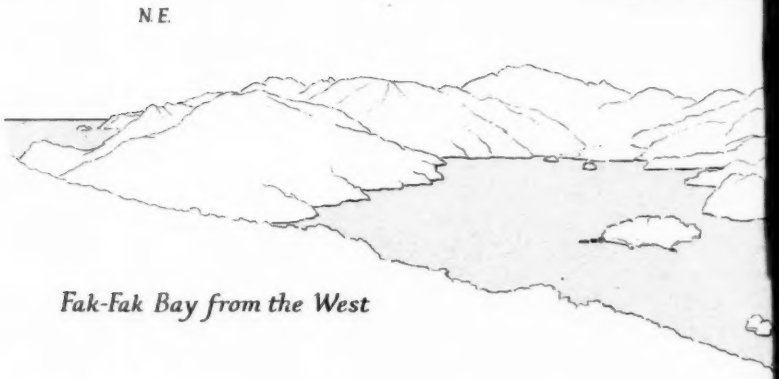

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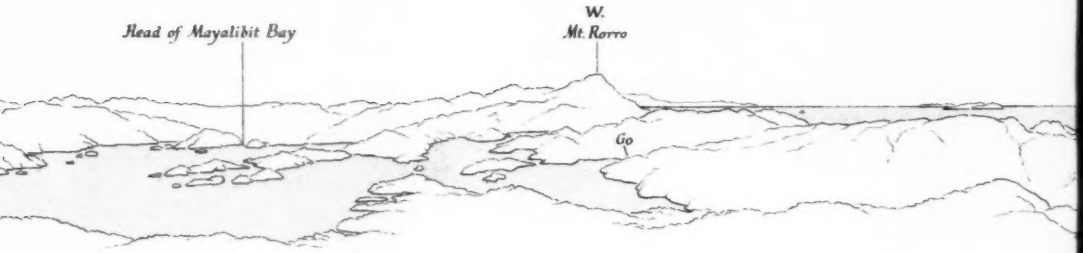
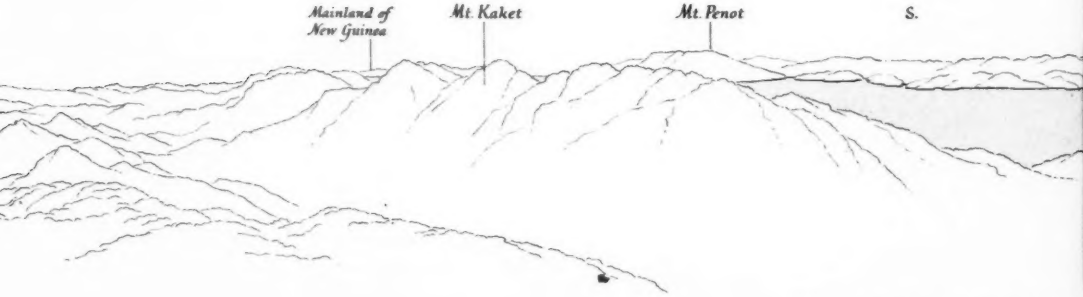


Panorama from Mount Nok



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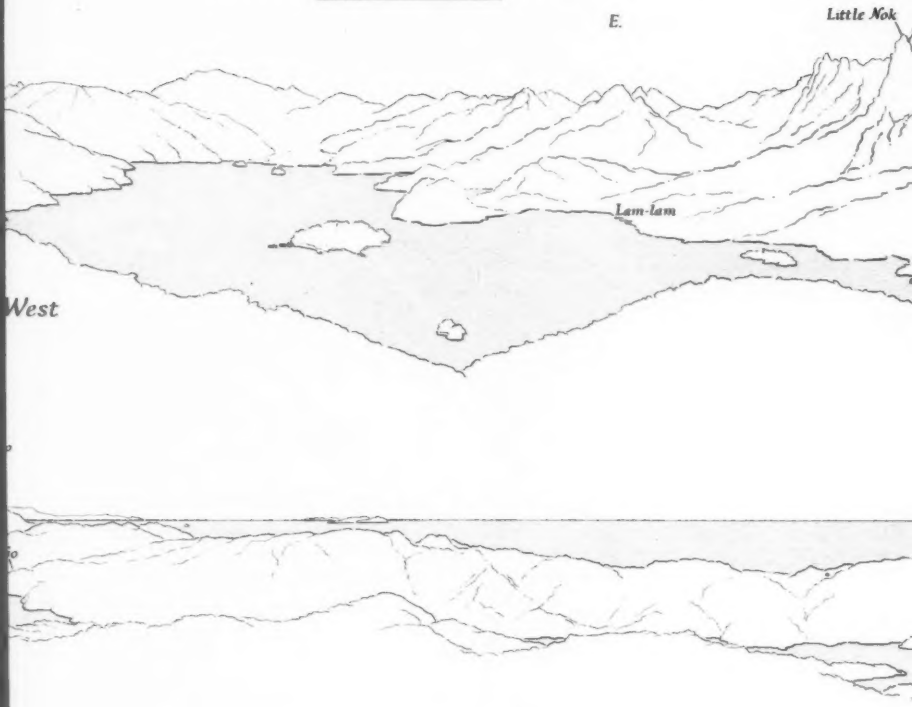
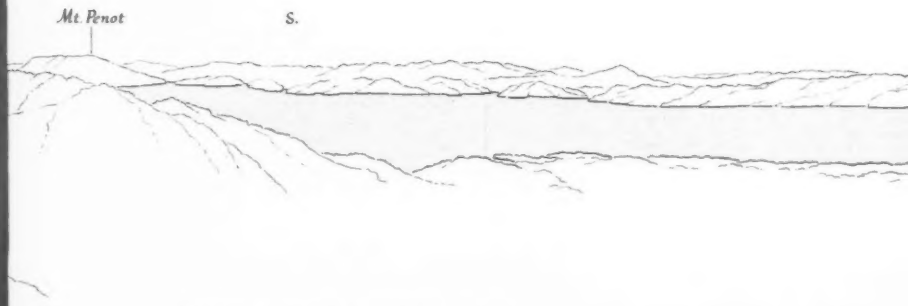


Panorama from Mount Nok (Buffelhorn)



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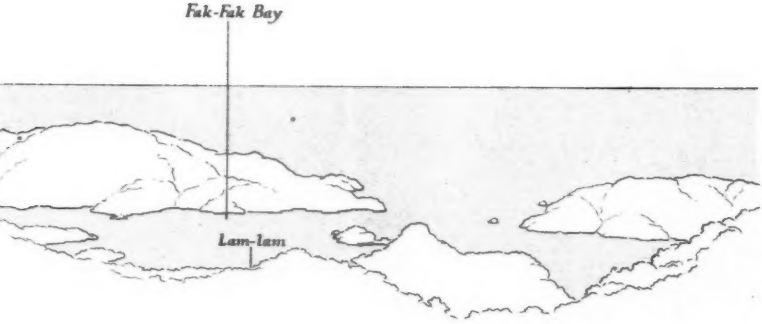

Dutch East Indies
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